An exploration of the knowledge required by nurses to achieve occupational capability Looking beyond the theory-practice gap.

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Thesis Title

An exploration of the knowledge required by nurses to achieve occupational capability – looking beyond the theory-practice gap.

An empirical study to explore if nurses practise in ways that are congruent with a phenomenological account of knowledge.

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Abstract

The knowledge required for nursing competence has commonly been conceptualised in terms of theory and practice. This presents two separate and distinct accounts of the knowledge required for occupational practice, where deficits in a nurse's competence are often assumed to arise because of a lack of either theoretical or practical knowledge. However, others claim that this provides a rather disjointed and incoherent account of the knowledge required for occupational practice. Instead, they have suggested knowledge is grounded on a much more fundamental understanding of human involvements, disclosed to us through our shared engagement in a world of meanings and understandings, as anticipated by the phenomenological philosophers Heidegger (1962) and Merleau-Ponty (2014). From this perspective, the ability to perform within an occupational role involves a learning to perceive, interpret and understand the 'world' of the occupational group one is aspiring to join. This empirical study set out to gain insight into the knowledge and understandings substantially required to perform within an occupational role. Using a case study of ten nurses working with an acute hospital NHS Trust, this study examined how such understandings may be manifested in their everyday practice. From thematic analysis of data collected from participant observation and qualitative interviewing, evidence was found to support the view that nurses practised in ways that were congruent with this phenomenological account of knowledge. This study contributes to the existing literature by concluding that the knowledge required for nursing competence involves an ability to perceive and relate to practice in ways that are constituted by a kind of phenomenological understanding. It also suggests that nurses are subconsciously disposed to adopt practices, in accordance with these understandings. This study recommends that nurse education should abandon its focus on the outcomes of learning, which are secondary and derivative of a more fundamental understanding, and instead focus on the tacit and embodied nature of knowledge that gives rise to such capabilities.

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Chapter One – Introduction

1.1 Introduction

There have been many criticisms over recent years that nurse education is failing to develop competent nurses. Concerns of poor nursing care have been cited in public inquires (Francis, 2013) and in negative press headlines which claim that nurses are 'lacking ability and compassion' (Adams, 2012). Registered nurses have also criticised new graduates for an inability to think critically and for demonstrating poor clinical and technical skills (Missen, McKenna and Beauchamp, 2016). This has led to suggestions that newly qualified nurses are unprepared for their occupational role (Monaghan, 2015; Edward *et al*., 2017). The question then is why is this still the case 'when the education and clinical training required for qualification in the UK appears, at least in theory, robust' (Wells and McLoughlin, 2014, p. 137). These criticisms can be seen as a failure of the Nursing and Midwifery Council's (NMC) strategy to develop nurses who are 'fit for practice and purpose' at the point of qualification (Bradshaw and Merriman, 2008). They may also be interpreted, by some, as a failure of university-based programmes to adequately prepare nurses for their occupational role (Benton, 2011).

In response to such criticisms, the NMC, as professional regulator, will often try to address these concerns by reviewing the pre-registration curriculum. Within this curriculum, the knowledge required to educate nurses is generally conceived of in two distinct ways, the theoretical and the practical. The first relates to knowledge gained from academic study (theory) and the second to knowledge acquired in the work environment (practice). This presents two contrasting perspectives on the nature of knowledge required to nurse. The role of the curriculum then, is to try to accommodate these two disparate ways of knowing to 'ensure an equal balance between theory and practice learning is

achieved by the end of the programme' (NMC, 2010, p. 68). According to such thinking problems associated with professional education, and its ability to develop capable nurses, is due to a failure to balance theory and practice; commonly referred to as a theory-practice gap (Gallagher, 2004).

However, others claim that the problems associated with professional education, and its ability to develop competent practitioners, arise because these capabilities have not been adequately understood. Commentators like Benner (1984) and Gibbs (2011) have drawn on phenomenological accounts of knowledge to explore such capabilities. In these accounts, knowledge is said to be grounded on a much more fundamental understanding of human involvements, acquired by our engagement in a 'world' constituted by a complex network of shared meanings and understandings. Capability, from a phenomenological perspective, involves a learning to perceive, interpret and understand the 'world' relative to that occupational group. This account avoids the expression of knowledge in theoretical or practical terms and, as such, has the potential to explore occupational capability from a more holistic perspective. This study will try to explore such capabilities from this perspective, in the hope that the findings can usefully inform the kind of preparation required by nurses to fulfil their occupational role.

1.2 Background

My interest in this area originated as a result of my experience as a clinical educator, working alongside nurses who managers had identified as weak practitioners. While the capability of these nurses appeared limited, I suspected that these deficits often arose because of the way these individuals understood and approached their work. This resulted in their performance appearing out-of-sync or somehow disconnected from their immediate work environment. Therefore, while able to perform specific tasks, they did not seem to understand

the significance or the appropriateness of undertaking them. For example, when caring for a group of patients they could not re-adjust their schedule of care in accordance with changing priorities, such as a deteriorating patient or a new patient admission. They also seemed unaware of the limitations in their capability, despite explicit feedback from managers. This meant my attempts to improve their capability by either revisiting theory or rehearsing skills, often proved futile, as they appeared to lack insight into these deficiencies. Predominant discourses in nursing may attribute this failure to an inability to relate theory to practice, however, I was not convinced these difficulties arose as a result of such a disconnect. Instead, I suspected a more profound issue that had so adversely affected their nursing capability.

For the purposes of this study, I will adopt Lum's (2009) use of the term 'occupational capability' which is intended to encompass: '…the entirety of those skills, competences, capacities, perceptions, attitudes and forms of knowledge which a person might require in order to fulfil an occupational role' (p. 1). This term is broad enough to encompass anything, or everything, that other commentators have considered to be a fundamental part of proficient practice. It also avoids the use of terms such as skill or competence, which come with attendant preconceptions.

1.3 The rise of competence-based education and training (CBET) in nursing

Nurse education has placed emphasis on the importance of practice and then, alternatively, the importance of theory at different times throughout its history. Nursing's origins as a practice-based discipline involved direct participation in clinical practice to become 'hands on' practitioners (RCN, 2007). This model of clinical apprenticeship was later criticised for its focus on practice and neglect of theory. There was also a growing realisation at the time that nursing work was becoming increasing complex, requiring greater technical skill

and professional autonomy (Traynor, 2013). These considerations led to the abandonment of the apprenticeship model, and the wholesale move of nurse education from hospital-based schools of nursing into Higher Education, with the introduction of Project 2000 in 1989. In this curriculum, nurses now required an academic diploma as a minimum requirement to enter the profession (Bradshaw, 2001). Perhaps not surprisingly, early criticisms of Project 2000 maintained it was failing to develop the clinical skills required for practice (RCN, 2007), leading to claims that 'nurses educated in universities are too clever to care' (Watson, 2002, p. 476). Such criticisms suggest that the professional curriculum had gone too far in prioritising theory over practice.

According to Watson (2002) concerns of this nature made nurse education more receptive to the introduction of competence-based education and training (CBET). This is because CBET, with its 'anti-intellectualist' rhetoric, is more 'concerned with what people can do rather than what they know' (While, 1994, p. 526), in this way reaffirming the importance of practice over theory within the professional curriculum. CBET's introduction around this time was part of a common trend in industrialised countries to reassert the 'economic and vocational function of education' (Hyland, 1994, p. 3). CBET methodology and, in particular, its use of competency statements can also provide professions with 'public statements about what their qualified members are competent to do and what people can reasonably expect from them' (Eraut, 1994, p. 211). In providing such statements, the discourse of CBET appears to make the capabilities required for competence explicit, and is therefore congruent with the 'rise of managerialism and the imperative of transparency within the public sector' (Traynor, 2013, p. 93). CBET continues to be popular in nurse education today, despite criticisms of it for its methodological narrowness and reductionist tendencies (Hyland, 1994). This is possibly because, according to CBET's rhetoric, it emphasises what a practitioner can *do* and therefore has a 'persuasive power at the slogan level' (Hyland, 1994, p. 31), in making professional education appear relevant to clinical practice.

1.4 The theory-practice dichotomy

The idea that knowledge is of essentially two kinds, theoretical and practical, is well established in Western educational thinking, evident in Aristotle's distinction between *techne* (practical craft) and *episteme* (knowledge). René Descartes reinforced the notion of a separation between the immaterial mind and the material body, often referred to as Cartesian duality, that assumes man is essentially a rational or thinking being (Descartes, 1890). This apparent divide between theory and practice is also evident in Ryle's (1949) use of the terms 'knowing-that' and 'knowing-how' and Eraut's (1994) reference to propositional or process knowledge. These distinctions create a divide between knowledge that is said to consist of theoretical propositions and the knowledge necessary for practical performance. This means, according to Rolfe (2005), that 'it is impossible to talk about theory and practice in the English language without invoking the idea of a gap between them', as though there was always a separation between 'the idea and the action' (p. 41). This can lead to a perception that

> …theory and practice are mutually exclusive: that it is possible to have one without the other; that all theory is pure thought and that all practice is pure action; and in particular, that there is something *atheoretical* about practice
>
> (Rolfe, 2005, p. 41).

Such ideas would seem to have far-reaching implications for occupational capability. For example, those who emphasise the importance of theory have been criticised for assuming that capability arises through the mastery of facts (Hutchinson *et al*., 2016) or the following of prescriptive rules (Klein, 2009), or to claims that practice requires more 'knack rather than understanding' (Peters, 1980, p. 95). On the other hand, those who emphasise the importance of practice may be 'more concerned with people's competences than with their

cognitive repertoires, with the operations than with the truths that they learn' (Ryle, 1949, p. 28). This can lead to an assumption that theory is somehow superfluous to practice (Hyland, 1994). Therefore, it might be said that this dichotomous account of knowledge, in separating the mental and physical components of performance, is unable to account for the totality of competences, capacities, perceptions and attitudes required for occupational capability.

1.5 A phenomenological account

There are however, tendencies of late, which draw on phenomenological traditions of thought to account for the knowledge required for occupational capability. Such accounts transcend 'the problematic notion of knowing attributed to *techne* and *episteme'* that lie at 'the core of the learning hegemonies' (Gibbs, 2011, p. 23). One such account, which I will term as a kind of 'phenomenological understanding', suggests that we develop occupational capability by inhabiting a 'world' disclosed to us through a whole network of interconnected meanings and understandings, constructed through our interaction and engagement with it. From this perspective, our basic relationship with the world is not as subjects encountering objects, but is rather concerned with a much more basic intentionality, or a kind of 'mindless' everyday coping, that forms the basis of all our intelligence (Heidegger, 1962). This means when we are working in our capacity as nurses, engineers, teachers, etc., 'the world' is disclosed to us in particular ways. It is perhaps this kind of phenomenological understanding, which may importantly constitute capability in nurses.

This is an account of capability congruent with that proposed by Benner (1984), Dreyfus and Dreyfus (1986), Lum (2009) and Gibbs (2011), which are largely influenced by Heideggerian philosophy. According to this account, when we inhabit the 'world of practice' we will adopt a certain predisposition or

'readiness' to see certain things as things. We will be emotionally predisposed to experience things in certain ways, and to associate certain events with certain body states. We will also come to an understanding of the objects we utilise within our occupational roles, not in relation to their physical properties, but rather in terms of the activities in which they are employed. These activities, in turn, will not be seen as ends in themselves, but will rather relate to a much wider world of involvements that gives these actions meaning and significance. In this sense, we will be disposed to act in certain ways that are guided by this complex network of background understandings and develop shared purposes, goals and values as that of our fellow practitioners. We will also adopt normative ways of going about things, similar to that of our fellow practitioners, and be mindful of how our performance accords with theirs. Through such engagement, we will begin to adopt a purposeful stance on the world that structures our consciousness, as we begin to identify ourselves as nurses, engineers, teachers, etc. within that occupational world. To be capable then is to be able to find our way around in that world so that we are able to cope in it. This involves the development of certain fundamental, background understandings of the 'world', relative to that occupational group.

An account of occupational capability in these terms differs in many significant ways from those accounts derived from the traditional theory-practice dichotomy. Firstly, knowledge is said to arise from a fundamental understanding of the 'world', so terms like theory and practice no longer appear appropriate. Secondly, an individual's engaged and embodied activities are seen as the primordial way of being, which challenges the Cartesian notion that man is essentially a rational being (Dreyfus, 1991). Thirdly, from this perspective, normative practice is guided by certain shared, background understandings; rather than by any formal, explicit rules. Such an account can therefore avoid certain problems associated with the traditional dichotomy, and its polemic between subject/object, theory/practice and thought/action. Instead, from a

phenomenological perspective, knowledge is grounded on a primordial understanding of the 'world', from which all knowledge arises.

For the purposes of this study, I will use the term phenomenological understanding to encompass ideas that have derived, in part, from the work of Martin Heidegger and, as we shall see, others from different theoretical traditions. These alternative accounts, although not of a phenomenological persuasion, demonstrate a certain correspondence with this perspective. While Hedeiggerian phenomenology has been used extensively to explore occupational capability, this study's original contribution to knowledge is the inclusion of ideas drawn from these other traditions.

1.6 Research aims

This study will set out to explore the kind of knowledge and understandings that importantly constitute occupational capability, and how they are made manifest in the everyday practice of registered nurses. It will examine how nurses perform and describe their practice, in an attempt to reveal the kind of knowledge and understandings that contribute to capability. These behaviours will then be interpreted to ascertain whether they are congruent with, or can be adequately explained by, a phenomenological account of knowledge. In this way, the study will try to determine if capability in nurses may be said to be constituted by a kind of phenomenological understanding. The research aims to do this by addressing two key questions:

1. Can evidence be found to support the view that nurses are perceiving and interpreting situations in ways that could be understood by a phenomenological account of knowledge?

2. In what sense might the nurses' practice be said to be rule-governed?

My hope is that this evidence will contribute to our understanding of the capabilities at issue and present a challenge to the predominant discourses, prevalent in nurse education, that are derived from a theory-practice dichotomy. This, in turn, may have important implications for how we plan, organise and develop educational curricula.

1.7 Outline of the study

The study will begin in chapter two, by critically examining the account of knowledge derived from the theory-practice dichotomy. In chapter three, I will explore alternative accounts that cast doubt on the viability of this dichotomy in accounting for capability, and suggest why a phenomenological account succeeds in avoiding many of these difficulties. I will then look for empirical evidence to try and reveal the kind of knowledge and understandings that contribute to nurses' capability. In order to do this, I will undertake a case study to explore the practice of ten registered nurses working within an acute hospital environment. I will use a combination of participant observation and qualitative interviewing to examine the implicit meanings, interpretations and understandings that the nurses hold in relation to their practice. It is hoped this mixed method methodology will help to differentiate between how nurses actually practise from how they say they practise, or as Argyris and Schön (1974) put it, the difference between their 'theories-in use' and their 'espoused theory' (p. 7). Data will be analysed and interpreted using thematic analysis to identify any latent themes that relate to the research questions. In this way, the study offers scope to explore the knowledge and understandings that contribute to nurses' capability.

Chapter Two – Occupational capability and the theory-practice dichotomy

In chapter one, it was established that the knowledge required for occupational capability is commonly referred to in terms of theory and practice. This dichotomous account of knowledge has given rise to two predominant, but separate, discourses in nurse education. On the one hand, is the discourse of competence-based education and training (CBET) that emphasises practical know-how. On the other hand, is the discourse of evidence-based practice (EBP) which emphasises theoretical know-that. Each of these accounts differs in what they consider a nurse needs to know in order to practise and each will have their own particular champions. Although positioned on either side of the theory-practice dichotomy, both discourses can been criticised for failing to take into account all that is required for occupational capability. This has led to an assumption that problems associated with professional education, and its ability to develop capable nurses, is due to a deficiency of either theory or practice. The difficulty here is that some may see this deficit as arising because of a lack of theory and others as a lack of practice; giving rise to the notion of a 'theory-practice gap'.

2.1 The theory-practice gap

The term 'theory-practice gap' can be interpreted in many different ways, on one reading it might be understood as a gap between educational preparation and that which is required to perform within an occupational role. Rolfe (1996) appears to interpret the gap in this way when he refers to a dissonance between nursing theory and the realities of clinical practice. In this sense, the terms theory and practice relate to a 'preparation-performance gap'. Alternatively, 'theory' and 'practice' can be used to distinguish between the '*antecedent conditions*' (Lum, 2007, p. 134) of knowing, or the conditions in

which learning takes place. For example, learning in a classroom rather than a clinical environment, or learning from a text rather than a practical exercise. Falk, Falk and Jakobsson Ung (2016) interpret the term in this way, when they refer to the sequencing of the professional curriculum where 'practice precedes theory' (p. 14). In this interpretation the terms theory and practice relate to theoretical and practical input, rather than theoretical or practical knowledge.

Theory and practice can also be used to distinguish between the '*consequent conditions*' (Lum, 2007, p. 134) of knowing, that is, how learning is made manifest, such as when we distinguish between a person knowing facts (theory) and a person knowing how to do something (practice). An example of this interpretation is illustrated in the following statement that,

> …nurses who are proficient in theory are able to write the best care plans, discuss pathophysiology, treatment rational, etc., however, they struggle with hands on practice. On the other hand, nurses who exhibit strong clinical practice skills often find it difficult to rationalise the care in terms of theory. Their knowledge of pathophysiology and pharmacology needs to be strengthened
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> (Ajani and Moez, 2011, pp. 3927-3928).

In this example, the distinction between theory and practice is made in relation to the outcomes of learning, or what we may call the manifest consequences of learning. So nurses proficient in theory can 'discuss pathophysiology', and those proficient in practice will demonstrate 'strong clinical practice skills'. Such thinking can also lead to an assumption that theoretical knowledge gives rise to theoretical outcomes. For example, a better knowledge of pathophysiology (theoretical knowledge) will improve a nurse's ability to discuss the rationale for treatment (theoretical outcome). However, to assume that theoretical outcomes *only* arise from theoretical knowledge and

practical outcomes from practical knowledge, implies that theory and practice have no effect on one another. Alternatively, to argue that theoretical *or* practical knowledge can give rise to either a theoretical *or* practical outcome, 'is to undermine the very rationale upon which the presumption of two forms of knowledge is based' (Lum, 2007, p. 137). In other words, while it is possible to distinguish between theory and practice in terms of a 'preparation-performance gap', or in terms of the 'antecedent' and 'consequent' conditions of knowing, it is less feasible when understood as a gap between two distinct forms of knowledge.

This conflation of knowledge with its outcomes, or consequent conditions, can lead to a behaviourist account of intelligence. A criticism that Hyland (1993) has made of CBET methodology and its concern with the manifestation of knowledge in behaviours, i.e. in the facility to say something (theory) or to do something (practice). However not all knowledge can be manifested in behaviours. For example, it may be possible to know something and not be able to demonstrate it, or be able to perform something in a mechanical way without having the required knowledge. There exists then an important 'logical distinction between knowledge and its consequences that prevents any straightforward identification of the one with the other' (Lum, 2007, p. 136). This association between knowledge and its outcomes appears to arise directly as a consequence of the theory-practice dichotomy.

2.2 CBET and the prioritisation of practice

The term competence is commonly used in nurse education to refer to capability, yet there is no consensus over the precise meaning of this term. In some accounts competence relates to an all-round inclusive capability that incorporates everything that is required for proficient practice. On this reading, it is analogous to Lum's (2009) use of the term occupational capability. Epstein

and Hundert (2002) offer such an account that acknowledges a cognitive function in solving real-life problems, as well as an emotional awareness to exercise these capabilities judiciously and humanely. While others interpret competence as an intermediate level of capability prior to reaching expertise. This interpretation is evident in Dreyfus and Dreyfus' (1986) model of skill acquisition that Benner (1984) used to explore nursing expertise. Although Epstein and Hundert's interpretation of competence appears to refer to a higher level of capability than Dreyfus and Dreyfus', there is no suggestion that either account is prioritising practice over theory. Instead, they both appear to be referring to the totality of capabilities required to perform within an occupational role.

However, the same cannot be said of CBET's interpretation of competence, which places particular emphasis on practice over theory, leading to an assumption that theory is somehow irrelevant to intelligent performance (Hyland, 1994). Yanhua and Watson (2011) say this varied interpretation of the term competence means it is employed inconsistently amongst commentators. Such ambiguity makes it difficult to ascertain the quality of many arguments made in relation to competence, as we cannot be certain if the claims made are in relation to notions of CBET, and the prioritisation of practice over theory, or whether they relate to a more rounded notion of capability that transcends this theory-practice dichotomy. Nonetheless, CBET's interpretation of competence is often evident in the discourse of nurse education. Following the publication of the *Fitness for Practice* (1999) document, by the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC), learning outcomes for both competence and knowledge acquisition were introduced into the nursing pre-registration curricula. This emphasised the separation of theory and practice in relation to nurses' competence.

The discourse of CBET also has a tendency to associate competence with specific work roles, thereby applying a very narrow interpretation of the term. This interpretation is apparent in Eraut's (1998) description of competence as 'the ability to perform the tasks and roles required to the expected standard' (p. 135). This particular interpretation of competence is characteristic of the National Vocational Qualifications (NVQ) movement, which focuses on the performance of tasks in relation to specific occupational roles (Stuart, 2013). However, the ability to carry out and effectively manage these tasks is far more complex and involved than any outlining of them may indicate. After all, ten Berge and van Hezewijk (1999) claim, an occupationally capable individual must be able to discriminate between a successful and an unsuccessful performance, and have some internal sense about the right way of going about such things. They must also be required, amongst other things, to solve problems, cope with uncertainty, assess risks and make decisions in the absence of full and complete information (Weigel, Mulder and Collins, 2007).

As a result of these considerations many supporters of CBET have been keen to separate their interpretation of competence from that of the NVQ movement and, what they consider to be, its reductionist approach (Stuart, 2013). This has led Gonczi, Hager and Athanasou (1993) to advocate for a more 'integrated' competency-based approach, where competence does not lie solely on the personal attributes of an individual, or their performance in a series of tasks, but rather on the totality of knowledge, understanding and abilities that contribute to adept performance. It is this wider interpretation of competence that has been adopted by many professions, including nursing. Stuart (2013) suggests this interpretation offers a more holistic approach, which incorporates ethics and values as essential elements in nurses' competent performance. However, how far this integrated CBET approach succeeds in avoiding the criticisms made of the NVQ approach; remains questionable. It could be argued that as CBET is based on a dichotomous account of knowledge, its failings arise *precisely* because it places more emphasis on the practical over the theoretical.

Hyland (1993) suggests CBET therefore commits the same mistake as Ryle, by placing more importance on 'people's competences than with their cognitive repertoires, with the operations than with the truths that they learn' (Ryle, 1949, p. 28). In this sense, CBET appears to offer a rather flawed interpretation of the term competence.

2.3 Educational or political concerns?

For those involved in professional education the notion of competence serves, not just to outline what is required by the aspirant learner to perform in their occupational role, but also what is required, in terms of accountability, to the society in which that profession serves. Therefore, the idea of competence, according to Hodges and Lingard (2012), involves political, economic as well as technical considerations. This may explain why an interpretation of competence, equivalent to CBET, has become so predominant within nurse education, in that it provides a means to articulate its accountability to stakeholders. One of the key motivations for publishing the UKCC (1999) *Fitness for Practice* document was in order to meet the needs of those stakeholders involved in nursing and midwifery education.

These stakeholders include the NMC, whose concern is with 'fitness for practice' to ensure public safety through the issuing of licenses to practise. The Higher Education Institutions, whose concern is with 'fitness for award' to ensure the education is of a suitable academic standard. Finally, there are the prospective employers of nurses whose concern is with 'fitness for purpose', or the ability of newly qualified practitioners to function within their occupational role (UKCC, 1999). According to the UKCC, this competency approach allows different stakeholders to agree on a set of outcomes for pre-registration programmes resulting in a move towards,

> …outcomes-based competency principles to ensure that students develop not only higher order intellectual skills and abilities but also the practice knowledge and skills essential to the art and science of nursing and midwifery
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> (UKCC, 1999, p. 4).

This continuing commitment to outcome-based principles is evident in the more recent NMC (2010) standards for pre-registration nursing education.

Eraut (1998) suggests one of the reasons for the popularity of this outcomes-based approach to competence, is that they focus on what an individual can do, and therefore have more relevance for employers, managers and regulating bodies that oversee professional work. For example, when the NMC (2010) define competence as 'the combination of skills, knowledge and attitudes, values and technical abilities that underpin safe and effective nursing practice and interventions' (p. 11), they are giving an indication of the kind of capabilities they consider necessary to join the profession and be occupationally prepared for the world of work. Similarly, the Royal College of Nursing (RCN) (2008) say competencies outline what is required to practise in a manner that is 'lawful, safe and effective' (p. 8). So the articulation of competence, in the form of competency statements, has a rather 'common sense' appeal that perhaps serves political, rather than educational, concerns. However, while occupying a seemingly middle ground between the worst excesses of competences as expressed by the NVQ movement, and at the same time trying to define clearly and explicitly what is required for proficient practice, its introduction and use within nurse education is not without its critics.

2.4 CBET and its reductionist tendencies

One of the leading critics of CBET's interpretation of competence is Benner, who maintains,

> …the quest for competency statements and competency-based exams in nursing has led to what seems to be a premature faith in the current state of the art and capability of competency-based performance examinations in nursing. Carried along by a technological, measurement-orientated age, we have been convinced that many of our problems in nursing education and practice will be solved when we have mastered the current measurement technology available – when we can simply and unequivocally describe the competencies involved in the practice of nursing and measure them. Some of us have gone so far as to say that any area of practice that cannot be so defined, described, and measured does not legitimately belong in the arena of professional practice. Unfortunately, this faith in the feasibility of competency examinations does not come to grips with the difficulties and issues inherent in the methodology….to overestimate the power of competency-based testing will cause an undesirable reductionism in nursing
>
> (Benner, 1982, p. 303).

So, in this way Benner criticises many of the aims, purposes and methodologies employed by the CBET movement.

Many of Benner's concerns appear to be well founded, as the debate surrounding competence is often concerned, not necessarily with competence itself, but how that competence is specified. For example, Storey, O'Kell, and Day (1995) maintain that the expression of competence in the form of statements is problematic because, 'if there is too little specificity, the result may be a lack of clarity, poor communication and diminished credibility' (p. 382). On the other hand, Stuart (2013) suggests, too much specificity can become too

cumbersome and unwieldy for practitioners to effectively utilise. Competencies can also be highly reductive as,

> …the sum of the parts rarely if ever represents the totality of good practice…. in their tidiness and precision, far from preserving the essential features of expertise, they distort and understate the very things they are trying to represent
>
> (Norris, 1991, p. 334).

Others have questioned CBET's claim to capture all the attributes and capacities necessary for competent performance. So Jessup's (1991) statement that one 'who is described as competent in an occupation or profession is considered to have a repertoire of skills, knowledge and understanding' (p. 26) appears to refer to an all-round inclusive ability. However, in reality CBET's only distinguishing feature is its articulation of competence in the form of competency statements and performance outcomes (Hyland, 1994). Therefore, Jessup's (1991) statement that 'if you cannot say what you require, how can you develop it and how do you know when you have achieved it?' (p. 134), while appearing entirely reasonable is reliant on the use of language and empiricist assumptions about how such competence can be articulated, judged and measured (Lum, 2009).

Critics have also accused CBET of emphasising 'routine skills, teaching-to-the-test, and checkbox-driven assessment' (Hodges and Lingard, 2012, loc 221-222), or as 'striving for mediocrity' (Brawer, 2009, p. 1026). However, McAllister (1998) maintains that the concept of competence is not so much important in what it stands for, but rather what it stands *against* i.e. as the antithesis of incompetence. Therefore, while the meaning of competence is not always clear, Hyland (1994) says, the meaning of incompetence certainly is and he therefore suggests one is persuaded to be in favour of competence; despite its vagueness

and ambiguity. The problem that appears to arise here is that a criticism of competence, according to its interpretation in CBET, is a very different thing from a criticism of competence as conceptualised from a non-CBET perspective, or the ordinary sense of the word. So while CBET emphasises the practical at the expense of the theoretical, in its interpretation of competence, this would not be so if the theory-practice dichotomy were abandoned.

2.5 CBET and its suspect methodologies

Other criticisms of CBET have been made in relation to its claim that competent performance can be made explicit through the use of competency statements and measured objectively by an observer. Wolf (1995) says that this provides clarity and transparency over the assessment process for assessors, those being assessed, as well as any third parties. This means it is possible to make reasonable and objective judgements about which outcomes have been met, as well as those outcomes that have not been met (Wolf, 1995). However, Standish (1991) maintains, any attempt to capture capability in the form of statements invariably results in a shift from a desire to describe something rich and complex, to the expression of something far more literal and commonplace. For example, statements outlining 'communication skills' can often assume they arise 'independent of thought' (Standish, 1997, p. 453) and as such are portrayed as simple, quantifiable and non-controversial phenomenon (Lum, 2009). Similarly, Hyland (1993) criticises CBET for 'mistaking and confusing the assessment of X for X itself' (p. 65). He equates this with using Intelligence Quotient (IQ) as a measure of intelligence when IQ can, only at best, serve as a proxy for intelligence.

Nonetheless, it is not so much the philosophical questions pertaining to outcomes-based assessment that the nursing literature is concerned with, but rather the practicalities of using such methodologies to assess competence. This

is illustrated in Yanhua and Watson's (2011) systematic review of the literature on the assessment of competence. This review found that, while there were many attempts to improve rigour in the assessment of competence, more work was required as,

> …the possibility must exist, with large databases being available, of combining databases from different studies and different instruments in the search for common dimensions to nursing competence that can form the basis of better instruments in future
>
> (Yanhua and Watson, 2011, p. 835).

Pijl-Zieber *et al*. (2014) have similarly questioned the reliability and validity of clinical assessment tools to measure competence; while the National Nursing Research Unit (2009) suggest that, there is currently no 'gold standard' tool as none have been consistently used to establish their efficacy. This literature demonstrates that there is a conscious determination, on the part of many nurse educationalists, to assess competence through the use of specifically constructed instruments. This means attempts to improve competence have often become equated with a search for more robust tools to articulate and measure it. They therefore have a tendency, as Benner (1982) predicted, to 'overestimate the power of competence-based testing' (p. 303).

The assessment of nurses' competence in the clinical setting also appears problematic. For example, Cassidy *et al.* (2012) noted several difficulties encountered by nurses when using competency-based assessment tools. Some complained 'the language isn't user friendly……. we are a bit bamboozled by it' or that it was 'very flowery, very wordy….and you're searching for the simple meaning under it' (p. 349). Others found the tools difficult to use as,

> …I know they have the knowledge but have they actually got the skills…. the skills that are involved around therapeutic relationships, trying to measure that is quite difficult, in terms of a competency
>
> (Cassidy *et al.*, 2012, p. 349).

Even when presented with evidence, the mentors were unclear if the student had met the competency or not, as

> …they can bring you in reams and reams of stuff on communication…. they can write it up and it looks very good and it's excellent, it's actually matching it up, theory into practice…
>
> (Cassidy *et al.*, 2012, p. 349).

Not only does this demonstrate the apparent difficulty mentors have in interpreting the assessment criteria, it also draws attention to the supposed gap between the theoretical (knowledge) and the practical (skills). Again, demonstrating a resort to the theory-practice dichotomy in that the consequent conditions of learning, in this case the written evidence, becomes equated with theoretical knowledge that has to be 'matched up' against the practical competences.

Fitzgerald, Gibson and Gunn (2010) found similar problems with the use of competency statements to assess students' capability. They identified many inconsistencies between a mentor's written feedback given to students, and anonymous feedback given to the university about the same student. There may be several reasons to account for these discrepancies, such as a lack of time and support for mentors in making these decisions, or because the mentors do not understand the assessment documentation (Black, Curzio and Terry, 2014). However, Fitzgerald, Gibson and Gun also noted that these inconsistencies were

greater for those competencies associated with professional values, rather than those relating to clinical skills. This suggests, that while mentor feedback may be generally inconsistent, it is particularly so for those competencies which pertain to more ephemeral qualities, such as professional values. It could be argued this is because they are less amenable to demonstration as behavioural outcomes. However, it is also important to note that a nurse's professional values are perhaps a far more fundamental attribute of occupational capability than the performance of any clinical skill. Yet such attributes appear to be the very things that competency statements are least able to capture.

These studies highlight the apparent difficulty nurse mentors may have in assessing competence using CBET methodology. While there may be several possible reasons for this it does indicate that assessment, according to CBET, may not be as clear and transparent as Wolf (1995) suggests it is. This gives weight to the claims of Standish (1991), Hyland (1993) and Lum (2009) who say such capabilities cannot be expressed in the form of competency statements and be measured objectively by an observer.

2.6 Continuing concerns around nurses' capability

Despite the ostensible focus on competence in recent years, questions concerning nurses' capability persist. These concerns relate to competence in a non-CBET sense, or the ordinary sense of the word. For example, in Missen, McKenna and Beauchamp's (2016) systematic review of the literature on clinical competence, two key areas were identified as problematic. The first issue centred on clinical and technical skill development, indicating that nurses were failing to develop the practical capabilities that outcomes-based assessment sought to address. For example, Hartigan *et al.* (2010) noted that new graduates relied too much on machinery to record vital observations, rather than palpating pulses or manually recording blood pressures. New nurses were also unable to

perform more advanced skills, such as wound care, administration of medicines and management of intravenous fluids, or could not carry them out independently (Clark and Holmes, 2007; Hartigan *et al.,* 2010). The second issue highlighted concerns with the critical thinking of new graduates. This included a sense that nurses could not identify unsafe practice, recognise changes in patients' conditions, set priorities, solve problems or make clinical decisions (Berkow *et al*., 2009; Hickey, 2009; Hartigan *et al.,* 2010). Monaghan (2015) and Edward *et al*. (2017) have also suggested that newly qualified nurses are often unprepared for their occupational role.

It might be reasonable to assume that nurses will develop such capabilities later in their clinical career, when undertaking substantive work as a registered nurse. Therefore, if new graduates cannot demonstrate these abilities immediately upon qualification, it may not be so much of a concern. However, the focus on outcomes-based assessments, within professional curricula, can set up certain expectations from stakeholders about what can reasonably be expected from nurses in accordance with such outcomes. Thereby, by focusing on performance and outcomes, *rather* than the understandings that gives rise to such outcomes, CBET appears to be failing on the very things it purports to address.

2.7 Can CBET address deficits in nursing capability?

In view of its many critics, it is perhaps surprising that the notion of competence, as interpreted by the discourse of CBET, continues to have such a hold over professional education. One reason may be that it is congruent with general trends in society that emphasise openness and transparency in assessment methodologies, as advocated by Wolf (1995). After all, CBET appears to offer a simplistic, instrumental and objective means of measuring capability. CBET methodology also emphasises the importance of the practical over the

theoretical in professional education. As such, it can defend professional education from criticisms by those who consider 'knowledge and understanding as inert and passive' (Hyland, 1994, p. 70) and somewhat irrelevant to practice.

While acknowledging many of the limitations of CBET, Cowan, Norman and Coopamah (2005) maintain that a more comprehensive and inclusive definition of competence, as well as a better articulation of it in competence standards, might improve the general acceptance of the notion. Similarly, even though Watson (2002) criticises the methodology on philosophical grounds, he acknowledges it has considerable currency in professional education and cannot be abandoned altogether. This suggests that although assessment using CBET methodology is not perfect, it is accepted by many nurse educationalists as potentially viable. However, it is important to distinguish here the difference between competence as interpreted in a CBET sense, and its interpretation in a non-CBET sense, or the ordinary sense of the word. So, while it is important not to lose sight of the importance of competence that is not to say one should necessarily adhere to the CBET interpretation of the term.

2.8 Capability arising from theoretical or propositional knowledge

An alternative account of capability to that adopted by the practice / performance / CBET perspective, is the association of capability with theoretical or propositional knowledge. This is the kind of knowledge that can be articulated in a sentence to claim that such and such is the case, for example that 'the earth is flat' or that 'two plus two is four' (Pritchard, 2014, p. 3). This knowledge is considered to be relatively symbolic or abstract in nature, according to ten Berge and van Hezewijk (1999), and thereby capable of being applied to a whole range of unrelated situations and contexts. Eraut (1994) says knowledge in the cognitive domain is given a very high priority in professional curricula, resulting in expertise associated with a

> ….well-organised body of accessible and useful domain-specific knowledge, which an agent draws upon and adds to, in effectively solving complex problems
>
> (Hakkarainen *et al*., 2004, p. 17).

According to Hakkarainen then, occupational capability is concerned with 'an individual actor's actual cognitive competence' (2004, p. 19).

Many studies of expertise have focused on knowledge that is said to lie in this domain by comparing the decision-making of novice and expert practitioners. These include: the assessment and management of pressure ulcers (Lamond and Farnell, 1998); explorations of the decision-making of coronary care nurses (Corcoran-Perry, Narayan and Cochrane, 1999; Reischman and Yarandi, 2002); as well as investigations into nurses' cue collection within intensive care settings (Aitken, 2003; Hoffman, Aitken and Duffield, 2009). These studies often employ 'think aloud' techniques to elicit how nurses make decisions. Using real or simulated situations, these studies attempt to ascertain what cues, physiological or behavioural, the nurses are recognising and grouping together. From this perspective, the distinction between a novice and expert practitioner is the way they organise information within the cognitive domain.

Levett-Jones *et al.* (2010) also appear to be concerned with knowledge in the cognitive domain, when they describe clinical reasoning as the process in which nurses,

> …collect cues, process the information, come to an understanding of a patient problem or situation, plan and implement interventions, evaluate outcomes, and reflect on and learn from the process
>
> (Levett-Jones *et al.*, 2010, p. 515).

This, they say, depends on nurses being able to follow a logical process,

> …to collect the *right* cues and to take the *right* action for the *right* patient at the *right* time for the *right* reason' (original italics)
>
> (Levett-Jones *et al.*, 2010, p. 515).

For Levett-Jones *et al*., the right cues involve recalling a 'broad and deep knowledge of physiology, pathophysiology, pharmacology, epidemiology, therapeutics, culture, context of care, ethics and law', as well as the ability to 'synthesise and apply' (p. 517) this knowledge to clinical situations. This account can lead to an assumption that once one has acquired a certain degree of theoretical knowledge, or facts, pertaining to a situation, one's performance will automatically improve as a result. In other words, capability is about knowing more facts or acquiring more information.

However, ten Berge and van Hezewijk (1999) dispute such claims, arguing that a better knowledge of the rules of chess does not make one an expert chess player. Instead, they suggest something else is required for intelligent performance, other than knowing things in the propositional sense. Levett-Jones *et al*.'s account also offers a rather impoverished account of practice, which is reduced to a 'synthesise and application' of knowledge within the cognitive domain. Such thinking can lead to assumptions that practice is somehow derivative of theory, a claim disputed by Ryle (1949) who said intelligence is not comprised of accumulated facts, as there can be 'no incompatibility between being well-informed and being silly' (p. 26).

2.9 Limitations due to a 'cognitive bias'

Studies that privilege propositional knowledge have also been criticised by Eraut (2005) for maintaining a 'cognitive bias' (p. 178), and by Hakkarainen *et al.* (2004) for focusing too much attention on mental processes, mental representations and the intellectual activity of individuals. There is also a concern that propositional knowledge, espoused by Higher Education Institutions, is not always useful or relevant for practice (Rolfe, 1993; Eraut, 1994; Henderson, 2002). For example, Rolfe maintains that theoretical concepts cannot adequately inform nursing practice, as they have developed in a similar way to the natural sciences by focusing on, what Schön (1991) referred to as, 'technical rationality' (p. 21). This perspective assumes 'people are as predictable as inanimate objects' (Rolfe, 1993, p. 174). However, Rolfe argues, when faced with a question from a terminally ill patient as to whether they are dying, nurses will draw on their own experience of dealing with similar situations in the past, and not necessarily on any psychological theories.

The notion that theory informs practice can also lead to a belief that when errors occur, it is because someone lacks knowledge in a propositional sense and therefore requires educating. Paley (2007) refers to this as the 'education reflex' (p. 143) and argued instead, that many errors in practice could not be addressed by acquiring more information. He was able to illustrate this with an example from practice where nurses were confusing two forms of a medicine, *Oxynorm* for immediate pain relief and *Oxycontin* for prolonged pain relief. Paley maintains this confusion arose, not because the nurses did not *know* the differences between the two drugs, but rather because they could not distinguish them apart as a result of poor drug labelling. Other commentators, for example Winch (2010), have also noted that knowing something in a propositional sense does not automatically mean that one can actually perform it, as it requires the development of 'technique, habit or perception' (p. 44). In

this sense, knowing how to do something is not a direct result of having the most appropriate propositional knowledge in relation to that activity.

Kennedy (1987) was able to demonstrate the limitations of such thinking, that assumes if an individual is aware of certain facts in relation to an activity, that individual will be able to recognise a situation where it is appropriate to apply that knowledge, or 'recognise a particular case as an example of a general principle' (p. 139). Kennedy suggests this is more complicated than is often anticipated, as while general rules may provide 'rules of thumb' to handle situations, there are no rules of thumb to allow the individual to know when they need to apply a rule of thumb. Claxton, Lucas and Webster (2010) have also criticised those who prioritise cognitive reasoning over practical action. They say this gives rise to the notion that dealing with abstracted theories is seen as a far greater indicator of intelligence than dealing with the practical. In this sense, practical activity is considered as relatively simple to do, just a case of watching, following instructions and practicing through trial-and-error, reinforcing the idea that 'comprehension is prior to competence' (p. 10). An idea that is congruent perhaps, with the discourse of Evidence Based Practice (EBP).

2.10 Evidence-based practice (EBP) and the prioritisation of theory

In terms of knowledge, the discourse of EBP prioritises theory over practice. According to DiCenso, Cullum, and Ciliska (1998), EBP is a process in which nurses make clinical decisions using the best available research evidence, their clinical experience, as well as patient preferences, within the context of available resources. So, although appearing to be inclusive of various sources of knowledge, it has been criticised by Holmes, Perron and O'Byrne (2006) for promoting only 'one paradigm of knowledge development: that of post-positivism' (p. 95). This is because EBP is based on a series of processes that involve the generation, systematic appraisal and use of evidence (usually

scientific evidence), to inform practice. Blomfield and Hardy (2000) say such an approach avoids 'adherence to blind conjecture, dogmatic ritual or private intuition' (p. 122). Evidence-based guidelines have also been said to provide,

> ….practical steps that embody safe and effective practice; reducing the risks of patients receiving sub-optimal therapies; setting defensible standards for nursing practices; providing direction for newly qualified and recently employed staff
>
> (O'Halloran, Porter and Blackwood, 2010, p. 90).

However, O'Halloran, Porter and Blackwood note, while EBP may be able to tell us whether an intervention works or not, they cannot necessarily tell us *why* that intervention worked. This, they say, will depend on other lines of inquiry. The discourse of EBP is now so dominant within healthcare that Holmes *et al*. (2006) claim many practitioners assume it is the *only* means to ensure optimal care. The concern is that compliance with evidence-based guidelines can become an end in itself, where staff may demonstrate an unquestioning reliance upon them (McDonald *et al*., 2005). Christensen and Hewitt-Taylor (2006) also suggest that occupational capability has become characterised by adherence to clinical guidelines and care protocols by 'applying knowledge to specific care situations' (p. 1533). In many ways, EBP can be seen as a resurgence of the importance of theory over practice, which sets itself against the practice / performance / CBET perspective.

Klein (2009) maintains the discourse of EBP shares many similarities with the cognitive processing model of decision-making. According to this model, Ross, Shafer and Klein (2006) say, knowledge exists in the form of general principles and abstractions that can be applied to any practical situation. This means errors in decision-making are often seen as faults with the individual decision-maker; highlighting the fallibility of humans to mentally process

information. These ideas have led to a general scepticism of experts, and an assumption that professional judgement and expert decision-making are essentially faulty and not to be trusted. Kahenman (2012) illustrates this point using various examples of erroneous decision-making by experts. These errors include causal thinking, where individuals organise information into a coherent story thereby, subconsciously, inventing causes and intentions, where none exist. He also notes a tendency for individuals to construct false narratives about the past, so when an unpredicted event occurs, people will retrospectively come to see that outcome as inevitable. As a result, Kahenman recommends that in low-validity environments, where the parameters cannot be controlled, the accuracy of experts can be exceeded by more formal means of decision-making.

From this perspective, deficits in capability arise from a lack of propositional knowledge, or an inability to process it effectively. Such thinking has led to the introduction of a plethora of policies and algorithms to support more rational means of decision-making within organisations (Klein, 2009). This rhetoric has been espoused by many nurse educationalists who say that decisions should be made using, 'referenced facts and high-quality evidence' in a 'logical, systematic and rigorous way' (Moule and Hek, 2011, p. 20). This, they maintain, will reduce the chances of making mistakes by using 'validated decision rules' and 'national evidence-based clinical guidelines, such as those issued by the National Institute for Clinical Excellence' (Thompson and Dowding, 2004, p. 43). This also suggests that occupational capability in nursing may become equated with the following of validated decision rules in a formal and prescriptive manner.

2.11 EBP and its concern with rules

Evidence in EBP is often concerned with prescriptive or regulative rules. These rules impose a requirement for a particular action and usually follow an if-

and-then formulation, by outlining the simple dos and don'ts of a job (Eraut, 1994). They are also the kind of rules that Benner (1984) and Dreyfus and Dreyfus (1986) associate with novice, rather than expert, practitioners. Searle (1995) describes such rules as those that regulate 'antecedently existing activities', for instance a rule to 'drive on the right-hand side of the road' (p. 27), even though it is possible to drive prior to the existence of any such rules. In this sense, regulative rules cannot create possibilities for future activity. This may be the reason why many commentators are sceptical of their use in informing occupational capability.

Nevertheless, regulative rules can allow individuals to base decisions on what has worked well in the past, but not all meaningful behaviour can be reduced to them (Lum, 2009). For example, the National Institute for Health and Care Excellence (NICE) in their regulations *for Head injury: assessment and early management* inform us that,

> ...the minimum frequency of observation for patients with GSC (Glasgow coma scale) equal to 15 should be as follows, starting after the initial assessment in the emergency department: half-hourly for 2 hours, then 1-hrly for 4 hours, then 2-hours thereafter
>
> (NICE, 2014).

While this regulation outlines the minimum requirement for taking neurological observations, it cannot inform a practitioner when increased surveillance is necessary. Instead, this decision would depend on the practitioner's own experience and ability to read, or interpret a situation. It is also possible to anticipate a situation where a practitioner strictly adheres to this guidance, but fails to notice subtle changes that may warrant more frequent monitoring. Blind adherence to such rules or guidelines has been criticised as being incompatible with expert performance by both Benner (1984) and Hewitt-Taylor and Melling

(2004). However, Whittaker and Havard (2016) suggest that many organisational cultures, as highlighted in the Munro (2010) review, can facilitate the adoption of such rule-following behaviour, by individuals, as a means to cope with uncertainty; resulting in defensive practice. This may be one reason why practitioners may conform to such rules, despite their apparent incompatibility with expert performance.

This association between occupational capability and rule-following behaviour others believe is problematic, not because it anticipates the following of rules, but rather because they are the *wrong* kind of rules. Searle (1995) was able to provide an account of the normative behaviour of individuals in the absence of formal rules, by introducing the notion of constitutive rules; rules that individuals have no conscious awareness of. Using the formulation X counts as Y in context C, Searle illustrated how in certain contexts (C), pieces of paper (X), can count as money (Y), in that one can become familiar with exchanging pieces of paper that 'count as' money without having to formally learn these rules. While Searle related these constitutive rules to social institutions, such as money or marriage, Lum extended these ideas to apply to such phenomena as occupational capability or expertise. In this way, Lum suggests individuals will develop 'skills and abilities which are 'functionally equivalent' to rules' (2009, p. 145). It is rules of this kind, rather than prescriptive or regulative rules, which might more properly be said to underpin professional practice and the normative behaviour of occupational groups. These ideas, amongst others, will be explored in chapter three.

In summary, both accounts of knowledge derived from the theory-practice perspective appear congruent with certain positivist assumptions that emphasise clarity, explicitness and transparency, in their respective methodologies. This means efforts to improve occupational capability, from a CBET perspective, are often concerned with its articulation in competency

statements or with more robust tools to measure it. While, according to the discourse of EBP, more scientific evidence, prescriptive rules and rational means of decision-making, will not only improve occupational capability, but will also reduce the number of errors made by practitioners. However, the coherence of each account has been questioned, as not all capabilities can be objectively described and measured, or all situations anticipated, monitored and controlled. These failings appear to arise because they are derived from Cartesian duality, where knowledge is assumed to consist of both theory and practice. This means these accounts have a tendency to focus on the outcomes, or consequent conditions of knowing, rather than the intelligences that give rise to these outcomes. The next chapter will look at alternative accounts of capability that transcend this theory-practice dichotomy. Instead, it will draw on accounts of knowledge within the tacit, intuitive and embodied dimension, which are more congruent with a phenomenological account of knowledge.

Chapter Three – A phenomenological account of knowledge and occupational capability

In the previous chapter the shortcomings, inadequacies and conceptual incoherence of the theory-practice dichotomy were highlighted. It was also suggested that there was something absent, or missing, in this dichotomous account that failed to capture the essential attributes and capacities required for capability. In this chapter, I will explore alternative accounts of capability that are more congruent with a phenomenological account of knowledge.

3.1 Tacit knowing and the issue of outcomes

Perhaps one of the reasons why these capabilities cannot be understood in terms of a theory-practice dichotomy is that they appear to arise from knowledge that is said to be tacit, rather than explicit, and thereby not amenable to precise articulation. Polanyi (1966) described tacit knowledge in the phrase 'we can know more than we can tell' (p. 4), as we can recognise a familiar face among a thousand yet we cannot say how we do it. Drawing on ideas prevalent in Gestalt psychology, Polanyi claims, when interpreting a physiognomy, we have a general awareness of all its particulars without attending to any one particular feature. This is a kind of knowing then, that cannot be captured in the form of 'statements of outcome' or by recourse to prescriptive rule-following behaviour. It is therefore a kind knowing that appears to transcend the theory-practice dichotomy.

Carper (1978) and Benner (1984) recognised the importance of tacit knowledge for nursing practice, where

> …perceptual awareness is central to good nursing judgment and… (for the expert) this begins with vague hunches and global assessments that initially bypass critical analysis; conceptual clarity follows more often than it precedes
>
> (Benner, 1984, p. xxii).

The idea that sound nursing judgements can precede rational decision-making conflicts somewhat, with the discourse of EBP. Yet accounts of, what some have called, 'intuition' are widespread in the nursing literature such that Chilcote (2017) is able to offer a typical example: that involves a nurse sensing something is wrong, something they are unable to articulate and in the absence of concrete evidence. This leads them to take pre-emptive action by assessing the situation in a non-linear and non-analytical manner. Others have suggested that intuition is the very hallmark of nursing expertise, which supersedes knowing in the cognitive domain (Benner, 1984; Rew and Barrow, 2007; Titchen, 2009; Green, 2012; Chilcote, 2017).

Several empirical studies have also explored nurses' knowledge that is said to lie in the tacit dimension. One such study, by MacLeod (1994), used hermeneutic phenomenology to examine the 'taken-for-granted' practices of experienced ward sisters. MacLeod noted how these nurses paid attention to the 'little things', from how they advised patients to position their chest drainage bottles to prevent complications, or to position a bathmat to prevent falls. Rather than interpreting these 'simple' practices as just common sense, MacLeod maintained they 'require uncommonly common sense' (p. 365), and are deeply complex and imbued with knowledge. Such 'taken-for-granted' practices are unlikely to be captured through the discourse of CBET or EBP. For example, the positioning of the chest drain and the bathmat are too subtle and nuanced to be expressed as statements of outcomes, as they appear to relate to *how* things

were carried out rather than *what* things were carried out. Neither can the nurses be described as following any particular theoretical concepts or regulative rules in carrying out these activities.

While other empirical studies have also highlighted the importance of intuition in informing nurses' decision-making, they often exercise a degree of caution in legitimising this knowledge. For example, King and Macleod Clark's (2002) study into clinical decision-making noted that, while all nurses use intuition, the junior nurses had to learn to trust this knowledge. The important point here is not that nurses use intuition but rather that they often lack the confidence to act on it. This implies that nurses need to *learn* to 'trust' these intuitions in a way perhaps, they do not need to learn to trust decisions made in a more analytical or rational manner. Cork (2014) also acknowledges the importance of nurses' intuition in predicting the severity of injury in trauma patients, but argues that the overall acceptance of intuition could be enhanced by 'validating its effectiveness' and its contribution to 'patient care and outcomes' (p. 249). However, validating the effectiveness of tacit knowledge, in terms of its expression in outcomes, is problematic as it is difficult to ascertain *how* or indeed *what* knowledge contributed to these outcomes.

So even though there is evidence of nurses using intuition within their professional practice, Chilcote (2017) says nurses may not admit to doing so. This is probably because it conflicts with the predominant discourses of biomedical science and EBP in healthcare, which privileges knowledge acquired in a conscious and systematic way. In this sense, intuition can be considered to be 'irrational' (Easen and Wilcockson, 1996) and lacking in 'objectivity' (Moule and Hek, 2011). It has also been described as a

> …subjective and questionably entity and hence, until empirically and unequivocally validated, has limited applicability in a nursing profession which is attempting to develop a research base to supports its actions
>
> (English, 1993, p. 390).

In this sense, tacit knowledge appears to have little legitimacy in informing nursing practice. In an effort to mitigate some of these concerns, Easen and Wilcockson have highlighted the similarities between rational thinking and intuition, saying intuition is also based on a 'sound, relevant knowledge base and the ability to recognise patterns in the presenting problem' (p. 672). By such means, Easen and Wilcockson may be attempting to make tacit knowledge appear more congruent with formal, analytical modes of reasoning more in keeping with Cartesian thinking.

This apparent dismissal of tacit knowledge may also arise because, according to the theory-practice dichotomy, knowledge is commonly associated with its '*consequent conditions*' (Lum, 2007, p. 134) that is, the way in which knowledge is made manifest. By thus mistaking knowledge for its outcomes, rather than the intelligences that give rise to them, knowledge becomes equated with those outcomes. So if tacit knowledge has no discernible outcomes it follows, from this perspective, that it cannot be recognised as knowledge. This highlights one of the limitations of the theory-practice dichotomy, in conflating knowledge with its outcomes. A limitation that is not present in a phenomenological account of knowledge that instead focuses on the intelligences that give rise to such outcomes.

3.2 Embodied cognition versus atheoretical practice

Another common assumption that derives from notions of a theory-practice dichotomy is that there is something 'atheoretical about practice' (Rolfe, 2005, p. 41) or that theory is somehow 'extraneous or even irrelevant to intelligent capability' (Lum, 2009, p. 52). In contrast, according to the concept of embodied cognition, there is no separation between theory and practice. This is a kind of knowledge that, Polanyi (1966) claims, lies tacitly in bodily awareness outside of the conscious realm. Such knowledge provides a means to interpret the world around us, through our bodily encounters with other entities, and knowledge is said to be embodied when, 'an expert's skill has become so much part of him that he need be no more aware of it than he is of his own body' (Dreyfus and Dreyfus, 1986, p. 30).

Merleau-Ponty maintains this knowledge is not mediated through conscious awareness, or mental representations, but should be considered as a kind of motor intentionality as

> …one can know how to type without knowing how to indicate where on the keyboard the letters that compose those words are located. Knowing how to type, then, is not the same as knowing the location of each letter on the keyboard
>
> (Merleau-Ponty, 2014, p. 145).

Instead, the skilled typist will have such knowledge 'in their fingers'. Merleau-Ponty maintains such practical action is not brought about by conscious deliberation but rather by perceived opportunities to perform within an environment. He also suggests, motor skills should not be thought of as purely mechanical responses to stimuli, but rather as flexible ways of dealing or coping with the world. In this way, the idea of embodied cognition provides an account

of practical action that takes into consideration the background knowledge and understandings that contribute to such actions. As such, embodied cognition offers a richer account of practical performance than that provided by the discourse of CBET. It is also a kind of understanding that arises from a phenomenological account of knowledge.

More recent studies in neuroscience appear to support Merleau-Ponty's concept of motor intentionality. For example, Green (2013), drawing on the work of Gallese (2009), found that individuals possess mirror neurones that allow them to mimic or imitate the actions of others in ways that are essentially 'pre-reflective and pre-cognitive' (p. 248). The implications of this for occupational capability, is that individuals can subconsciously learn from others, by paying attention to their actions and emotions. In doing so, they can develop and improve their own actions, or responses to certain situations. However, this notion of embodied cognition does not feature in many accounts of occupational capability, which Hockey and Allen-Collinson (2009) attribute to the predominance of the disembodied view of rationality; characteristic of the theory-practice dichotomy.

3.3 A richer account of skills

Shakespeare (2003) says this lack of attention to embodied cognition is particularly notable in nursing, which 'involves *the use of their* (the nurse's) *own body* as one of the tools of their occupation' (original italics) (p. 47). After all, she says, nursing work involves a high degree of physical labour and spatial awareness. Shakespeare also notes that when commentators make specific allusion to physical work or practical skill, little consideration is made of the body in developing such capabilities. She illustrates this by reference to a paper by O'Brien and Davison (1994), on taking manual blood pressure readings, that says,

> …the stethoscope must not be pressed firmly…… inflate the cuff rapidly…… excessive stethoscope pressure……excessively fast or slow deflation of the cuff……..non-support of the patient's arm….not applying the cuff firmly, evenly and in the correct position…
>
> (O'Brien and Davison, 1994, pp. 393-394).

According to Shakespeare, all these instructions require an understanding of the embodied experience in terms of differentiating between 'firmly-lightly/floppily, excessively/minimally, non-support/support' (p. 52). Although, she notes, there is never any exploration of these experiences in relation to skill development. This also demonstrates the inadequacies of expressing capabilities as 'statements of outcomes', as they do not allow an individual to distinguish between what is considered a light, or indeed a firm, application of a blood pressure cuff. Instead an individual could only come to an understanding of these terms by working alongside other, more experienced, practitioners to recognise how *they* interpret these terms.

The expression of skills as 'statements of outcome' can also mean they are interpreted as 'everyday, practical, routine and mundane practices' (Brekhus, 1998, p. 36), capable of being reproduced identically, irrespective of context. In contrast, embodied cognition anticipates that practical capabilities, developed through habit, are not seen as purely mechanical phenomenon but rather as 'incorporated bodily know-how' that offer 'a perspectival grasp upon the world from the 'point of view' of the body' (Crossley, 2001, p. 123). This suggests that skills require constant practicing, updating and readjusting to ensure they are carried out in a contextually appropriate manner in every situation. So skills should not be considered as

> …an isolated ability in a person's body, but is better understood as a meshing of a person's intentions, through their abilities with the

> environment (including other people), already interrogated by a skilful person for significant information
>
> (Ingold, 2000, p. 353).

Embodied cognition therefore offers a richer account of skills than the carrying out of any specific techniques, which is often how they are portrayed in the discourse of CBET. This implies, to perform a skill is to demonstrate a particular understanding of the 'world', constituted by a complex network of meanings and involvements. In this way, skills should not be considered as simply methods, techniques or knacks, but rather as ways of physically and emotionally engaging with the 'world of practice' that helps us to negotiate and find our way around in it. In sentiments similar to Merleau-Ponty's, Leder (1990) maintains 'a skill is finally and fully learned when something that was extrinsic, grasped only through explicit rules or examples, now becomes to pervade my own corporeality' (p. 31). Again, this richer account of skills is more congruent with a phenomenological account of knowledge.

3.4 Emotions and intelligent performance

The role of emotions in contributing to intelligent performance, are notably absent in accounts of capability derived from the theory-practice dichotomy. This is possibly because it is difficult to determine how emotions contribute to particular outcomes, or behaviours. It may even be supposed that emotions give rise to irrational behaviour, or faulty decision-making. Damasio (2006) challenged such suggestions and, in his somatic marker hypothesis, argued that the absence of emotions can actually lead to irrational decision-making. This is because 'emotions and feelings *have been connected, by learning, to predicted future outcomes of certain scenarios'* (original italics) (p. 174). They can therefore reduce the multiple options involved in making a decision by rapidly identifying a 'bad' outcome; thereby acting like an automated 'alarm bell'. Damasio maintains this all takes place at a subconscious level,

allowing individuals to '*act* smartly without having to *think* smartly' (original italics) (p. xvii).

While Damasio explored emotions in relation to decision-making, Benner (2000) highlighted the importance of reading and interpreting the emotional states of others. She argues that, amongst other things, emotions can alert us to signs of danger, as even seemingly simple tasks, such as asking questions, depend on reading a patient's or family's concerns correctly. Failure to do this can lead to harm if the questions posed are inappropriate to the situation or context. However, such capabilities do not often qualify as knowledge because, from a Cartesian perspective, they 'cannot be turned into formal propositions' (Benner, 2000, p. 12). This illustrates the importance of emotions from two distinct perspectives, the first highlighted by Damasio in relation to decision-making, and the second, by Benner, in relation to reading the emotional states of others. Both of these accounts suggest that individuals are emotionally predisposed to experience the world and engage with it in a particular way; ideas very much in keeping with a phenomenological account of knowledge.

3.5 A distinct and constant reality - mental models and schemata

The assumption that the world is somehow constant and predictable, and that all situations can be anticipated, controlled and managed in some way, is characteristic of Cartesian thinking (Dreyfus, 1991). However, others, including Klein (2009) and Abercrombie (1989), have questioned these assumptions and suggested that how we perceive and interpret our environment is dependent on the perspective of the perceiver. Klein used the term 'mental models' to account for how individuals develop such a perspective, which derive from our understanding of causes. As such, these mental models can only capture a limited aspect of a particular system or event. Klein, drawing on extensive research into the decision-making of experts, demonstrated how the use of such

mental models could affect a practitioner's decision-making. He postulated that as most decisions are made under the conditions of 'time-pressure, uncertainty and ill-defined goals' (Ross, Shafer and Klein, 2006, p. 403), they do not lend themselves to conscious and deliberative means of analysis. Instead, he proposed that experts assess situations instinctively, by considering several variables at a time. He therefore concluded that the way individuals engage with situations is through the construction of mental models, or tacit ways of understanding situations.

Similarly, Abercrombie's (1989) use of the term schemata appears equivalent in meaning to Klein's use of the term mental models. Abercrombie maintains that schemata comprise a kind of mental preparedness that allows individuals to unconsciously perceive and interpret situations. In her research into the judgement and decision-making of medical students, she noted that they were inclined to adopt particular 'habits of thinking' (p. 15). These habits influenced the data they sought in any given situation, as well as how that data was interpreted and organised. As a result, Abercrombie surmised that individuals were not passive receivers of perceptual information, but rather active shapers of it. This led her to conclude that seeing and perceiving were never neutral acts but instead, were heavily influenced by our past experiences and our current understandings.

Mental models, or schemata, may also help individuals to recognise what is salient or important in any given situation, that Benner (1984), Dreyfus and Dreyfus (1986) and Eraut (1994) all acknowledge are important features of capability. According to such thinking, because of a 'performer's perspective, certain features of the situation will stand out as salient and others will recede into the background and be ignored' (Dreyfus and Dreyfus, 1986, p. 28). This implies that practitioners never view the world from a neutral perspective as,

> …whenever something is interpreted as something, the interpretation will be founded essentially upon fore-having, fore-sight, and fore-conception. An interpretation is never a presuppositionless apprehending of something presented to us
>
> (Heidegger, 1962, pp. 191-192).

These accounts of occupational capability indicate that individuals are not neutral spectators of a constant and fixed reality, common in Cartesian thinking. Instead, they suggest that the way individuals engage with their environment, is dependent upon their background understanding that, in turn, influences how they perceive and interpret it. These ideas are also congruent with a phenomenological account of knowledge, which assumes that individuals inhabit a world constituted by an interconnected network of meanings and understandings. In this sense, notions of mental models or schemata, may demonstrate *how* individuals may come to perceive and interpret this world.

3.6 Capacities developed through participation

Lave and Wenger (1991) similarly cast doubt on the viability of the theory-practice dichotomy in accounting for expertise. In their theory of communities of practice, knowledge is no longer assumed to consist of theoretical abstractions or propositional knowledge. Instead, Lave and Wenger maintain that all theories of learning make certain fundamental assumptions about the person, the world, and the relationship between them. From their perspective, learning is a means of *being* in the social world, rather than a way of coming to know about it. This means all knowledge, according to this theory, needs to be renegotiated within different contexts. Lave and Wenger therefore maintain that occupational capability arises as a result of: the gradual inculcation of a novice into a particular field of practice to such a degree that this culture becomes their own. Their theory also questions the Cartesian notion that there

is a fixed and constant reality and rather suggests, like Klein and Abercrombie, that perception is shaped by the perceiver.

Wenger (1998) was able to develop these ideas further, by illustrating how different communities are able to build an interpretative framework through their participation in this community. For example, in the occupational world of medical claims' processors, words like 'voids' (p. 20) and 'junk claims' (p. 33) take on their own particular meaning, relative to that practice. In this world, medical conditions are no longer interpreted in terms of the disease they refer to, but rather whether they are legitimate conditions to be claimed for. Wenger maintains, through such activities, communities are able to produce physical and conceptual artefacts, such as tools, concepts, methods and stories, by a process of '*reification*' (original italics) (p. 55). This idea of reification, where something immaterial is transformed into something concrete, allows occupations to attach specific meanings and purposes to particular objects and activities (Wenger, 1998).

In this way, Wenger is able to illustrate how communities of practice can develop a shared language and understanding of what matters within a field of practice. According to this theory, occupational capability involves the embodiment of the whole individual, through the physical, mental and emotional participation in social practices. This suggests that capability is less concerned with the development of discrete skills, but rather 'capacities developed through participation' (Evans *et al*., 2006, p. 15). The idea that communities can produce physical and conceptual artefacts through a process of '*reification*', also demonstrates a certain correspondence with the notion that capability is constituted by a kind of phenomenological understanding. According to this understanding, when we are working in our capacity as nurses, engineers, teachers etc., the world is disclosed to us in particular ways. This also suggests that, as we come to inhabit this world, we will be disposed to act in

certain ways in accordance with the implicit meanings and understandings that constitute that world.

3.7 Working beyond rules

Common in accounts congruent with the discourse of EBP, is the notion that capability arises as a result of rule-following behaviour. In this case, the following of explicit, prescriptive or regulative rules that indicate how one should act in certain situations. However, Dreyfus and Dreyfus maintain such prescriptive rule-following behaviour cannot account for expertise as, like computers, they cannot display intuition or common sense because,

> …computers are analytic engines. They can apply rules and make logical inferences at great speed and with unerring accuracy. To exactly the extent that rules and inferences have a crucial place in everyday human affairs, the computer has a place in improving and implementing logical thought. Since the extent is limited, so also is the place of the analytic engine
>
> (Dreyfus and Dreyfus, 1986, p. xxi).

Instead, they suggest that, capability arises as a result of a kind of situational understanding, which allows individuals to intuitively comprehend the subtleties of a situation, recognise patterns and act instinctively. These capabilities, they say, gives rise to fluid performance where individuals learn to act 'on their feet' and 'in the moment'. Benner (1984) also associates such prescriptive rule-following behaviour with novice or junior practitioners. Instead, she maintains, expert practitioners can identify what is salient in any given situation and can anticipate the unexpected. As a result, Benner suggests, higher levels of capability are characteristic of intuitive, rather than analytical decision-making.

Schön (1991) is similarly critical of the notion that expertise arises as a result of prescriptive rule-following behaviour, and recognises that professionals do not often deal with straightforward technical problems, where the outcomes are fixed. Instead, he suggests, they are faced with complex problems, where several factors need to be weighed against each other, and knowledge gained from formal theories can only provide a partial answer. In order to deal with this variety of 'divergent' issues, Schön says practitioners need to review their own understanding of a situation and 'test' their new ideas as a form of 'on-the-spot' experimentation (p. 63). This process, which he terms as 'reflection-in-action' (p. 49), appears to advocate for a kind of intelligence not too dissimilar to Benner's ideas on intuition. However, this is not always the way Schön is interpreted. In fact, Rolfe (2014) suggests, reflection in nursing has become synonymous with a 'retrospective contemplation of practice' (p. 1179), rather than an immediate on-the-spot activity, that Schön intended. Perhaps this is because such a retrospective contemplation of practice is more congruent with conscious and deliberative modes of thinking, characteristic of Cartesian duality.

These accounts by Benner and Schön share certain similarities with a phenomenological account of knowledge, where the normative behaviour of capable individuals is guided by tacit and implicit understandings, rather than overt and explicit rules. These accounts also suggest that the following of prescriptive rules can limit the development of capability. For example, included in the work of Benner, Tanner and Chesla (2009), Rubin (2009) describes the practice of twenty-five experienced nurses who failed to develop beyond the level of competent practitioners, to become expert nurses, and are therefore considered 'safe but not superior practitioners' (p. 172). Rubin believes these nurses act in a disempowered manner; in that they simply carry out 'instructions' and 'never experience their patients as individuals' (p. 179). Similarly, Schön (1987) outlines how novices may fail to develop into experts, when they rigidly follow a set of procedures to the letter and apply it in every eventuality, irrespective of the situational context. In such situations, Schön maintains, a

student can 'over-learn' (p. 155), resulting in a dissonance between their practice and that of the expert.

Unsurprisingly perhaps, such accounts have received criticism for ignoring the role of analytical and rational problem-solving within expert performance (Gobet and Chassy, 2008) and for idealising learning from experience, while ignoring the fallibility of human judgement (Eraut, 1994). In fact, in Eraut's (2004) own research into work-based learning he claims that if individuals had more time to reflect then their decision-making would automatically become deliberative. It is only then, in times of rapid action or 'crowded contexts' (p. 261), that an individual is obliged to adopt a more intuitive approach to problem-solving. By this, Eraut may be implying that intuitive decision-making is secondary to deliberative decision-making; employed only as an inferior substitute when one lacks the time and space for more formal means. This demonstrates an allegiance perhaps, to the continuing importance of the theory-practice dichotomy in accounting for occupational capability.

3.8 Breaking rules and 'maverick' practices

Examples can also be found in the professional literature of capable nurses ignoring or overlooking prescriptive or regulative rules. For example, Hardy *et al*.'s (2002) study into nursing expertise, noted that many nurses participated in so-called 'maverick' practices (p. 196). These maverick practices referred to situations where nurses did not carry out the most conventional treatment options for patients. For instance, one nurse relates how they withheld administering an opioid injection to a terminally ill patient, as they suspected their 'pain was not specifically morphine responsive, but comprised components of mental, spiritual and social pain' (p. 197). Instead, the nurse tries other methods to ameliorate their pain by encouraging the patient to discuss the emotional impact of their diagnosis. In a further example of this seemingly

'maverick' behaviour, another nurse recounts how a 'client described feeling suicidal and requested to be admitted to hospital' (p. 197). Nevertheless, as the nurse felt the client required counselling rather than inpatient care, she 'resisted the temptation to make a decision for her' (p. 198), thereby encouraging their client's independence.

In these examples, although it is apparent that the nurses have not undertaken the most conventional interventions, there is still a sense that they have done the 'right' thing, and acted in the most appropriate manner with respect to their patients. These nurses then, cannot be described as following any prescriptive, or regulative rules, in relation to the way they practise; in fact they appear to be breaking such rules. However, there *does* appear to be a normative quality to the practice of these nurses, as it *is* possible to make a judgment as to whether their practice was right, good or appropriate. Such practices may be better explained by recourse to other, constitutive rules, rather than prescriptive or regulative ones.

3.9 Ways of being rather than ways of knowing

There are a number of empirical studies exploring occupational capability that have directly challenged Cartesian duality, and the notion of a theory-practice dichotomy. These studies have considered occupational capability from an ontological existential perspective or as 'ways of being', influenced by Heidegger's (1962) account of Being-in-the-world. This account suggests that individuals exist in a world, not in a literal sense, but rather in a 'world' of meanings and involvements based on an understanding of what it is to be human, which he terms 'there-Being' (*Dasein*). From this perspective, our connection with the world is not as disengaged spectators, but rather as active players in constructing this world. This also implies that our dealing with objects is not by detached contemplation of them, but rather through direct physical

engagement, by manipulating them and putting them to use, in what Dreyfus (1991) may term as 'absorbed coping' (p. 69).

Such accounts also consider that *Dasein* is essentially a social Being, involved in shared practices, which Heidegger calls 'being-with' or 'the-They'. Heidegger suggests that this pervades every aspect of our being, as we learn the most appropriate way to speak, to dress or to eat, as part of *das Man*. It is also through this engagement that we build an identity for ourselves and where we come to 'understand ourselves and our existence by way of the activities we pursue and the things we take care of' (Heidegger, 1982, p. 159). For Heidegger then, *Dasein* is essentially 'self-interpreting'. It is this particular interpretation of being that has influenced many studies into occupational capability.

One such study is Conway's (1998) exploration of nursing expertise, which suggests that nurses practised in ways that were congruent with their own particular philosophy, or 'worldview' (p. 77). This worldview, she said, depended on a variety of characteristics, which included the values of the nurse, the model of care they adopted, as well as their ability to reflect on practice. In this way, Conway was able to identify one distinct group of nurses who she felt demonstrated higher levels of expertise than their professional colleagues, and these were the nurses who related to their patients as individuals. Conway therefore concluded that it was the nurses' worldview; above all else, that distinguishes capability in nurses. In a similar study, Sandberg (2000) explored the expertise of engineers as they designed new models of cars. Like Conway, Sandberg was able to demonstrate that workers could be divided into discreet groups according to their worldview, with the most capable individuals sharing the same particular worldview. In this case, Sandberg maintained, the most expert engineers designed cars by considering the customer's perspective. Again, like Conway's study, it indicates that expertise lies, not so much in knowing more facts about engine design, but rather in having a greater

awareness of the meaning and purposes of the activities they are engaged in, as nurses or engineers. A further comparable study was undertaken by Dall'Alba (2009), who found that a medical student's understanding of their professional practice influenced the kind of practitioner they would become, over and above any theoretical input. These accounts offer an insight into the capabilities required for occupational practice from a phenomenological perspective that are invisible, or beyond the scope of, accounts that arise from notions of a theory-practice dichotomy.

3.10 Constitutive rules and what 'counts' as a competent performance

A further account that has cast doubt on the ability of the theory-practice dichotomy to capture the knowledge required for occupational capability, is that provided by Lum's (2009) notion of 'constitutive understanding'. Lum argues that whether one looks at the viability of this dichotomy from continental philosophy (Heidegger), analytical philosophy (Searle), or empirical psychology (Abercrombie), the dichotomy appears inadequate. Central to the notion of constitutive understanding, are ideas drawn from Heidegger's (1962) account of Being-in-the-World, Abercrombie's (1989) ideas on perception and the development of schemata, and Searle's (1995) account of the importance of 'the Background' in the construction of social reality, including such ideas as the assignment of function, collective intentionality, and constitutive rules.

According to Lum (2009), the way an individual comes to an understanding of the tools, artefacts or equipment employed within their occupational work, is through the 'assignment of function' (Searle, 1995, p. 13). In this way, functions are assigned or imposed on an object in relation the activities in which it is used. Such assignments of function are always made in relation to an extensive network of shared beliefs, meanings and understandings, or collective intentionality. In Heideggerian terms, objects are

interpreted as 'ready-to-hand' entities, in that they are involved in a whole chain of involvements that fit our wider purposes or 'for-the-sake-of-which'. Searle maintains this assignment of function can only take place in relation to a background, or primordial understanding, of the world that allows for certain perceptual and linguistic interpretations to take place. This facilitates a certain kind of 'readiness' in individuals, who will be disposed to 'see' particular phenomenon and to adopt particular behaviours in certain situations (Searle, 1995).

Incorporating Abercrombie's ideas, Lum (2009) maintains that occupational capability involves the employment of schemata that allows us to 'see' features of the world that are salient or even unique to a particular occupation. He also suggests that while we are constantly in the process of modifying, amending or abandoning the schemata that we have, we never approach a situation 'schemata-less' (p. 108). Therefore, he maintains, developing occupational capability is less about acquiring abilities to meet some objective external reality, but rather about our ability to modify our interpretations, so that what we perceive and understand, is congruent with how the wider world of practitioners sees and understands that same phenomenon. This sense of the constitutive rules allows a group of practitioners to agree on 'what counts' as a competent performance, or skilful act, as all performances are context-dependent relative to the conditions in which they occur (Lum, 2009).

This means it is possible to talk about a right or wrong way to go about things, for example a craftsman knows what it is that 'counts as the 'correct' way to hold a tool', or 'what counts as a 'suitable' blow of the mallet to the chisel' (Lum, 2009, p. 144). It also means that the craftsman is involved in '…continually and implicitly measuring his own behaviour against that of his fellow practitioners; he has a vital interest in how his actions accord with theirs' (p. 144). This suggests that capability involves an awareness of 'what counts' as a

competent performance amongst craftsman that can only be gauged by reference to the constitutive rules informing that practice. From these ideas, Lum was able to introduce the notion of constitutive understanding, which are the means by which our practices conform to these constitutive rules.

From these discussions, the viability of the theory-practice dichotomy in accounting for the knowledge required for occupational capability has been called into question. Significantly, it cannot account for the intuitive, tacit and embodied nature of knowledge that, others have suggested, is an essential component of occupational capability. So whether we are considering Polanyi's account of tacit knowledge, or Merleau-Ponty's concept of embodied cognition, or Damasio's concern for the importance of emotions in rational decision-making, the account provided by the traditional dichotomy appears impoverished. Instead, alternative perspectives on the knowledge required for capability, such as those proposed by Heidegger, Dreyfus and Dreyfus, Benner, Schön and Lum, appear to offer a more plausible and coherent account of such capacities.

For the purposes of this study, I will use the term phenomenological understanding to encompass ideas that have derived, in part, from the work of Heidegger and others, such as Klein, Abercrombie, Schön, Searle and Lum, from different theoretical traditions. Although the latter are not phenomenological accounts, they demonstrate a certain correspondence with this perspective. A phenomenological understanding therefore serves as an umbrella term to incorporate these different theoretical perspectives that seem to point in the same direction, including those accounts that would not ordinarily be described as phenomenological, for example Searle's. It is hoped that, by incorporating these other traditions, the study can provide a broader theoretical base from which to explore the knowledge and understandings that contribute to occupational capability.

Chapter Four – Methodology

This empirical study sets out to explore the kind of knowledge and understandings that importantly constitute occupational capability, and how they are made manifest in the everyday practice of registered nurses. Unlike ideas congruent with Cartesian philosophy, and the notion that man is essentially a rational being, this study anticipates that knowledge is based on a fundamental understanding of human involvements, acquired through our engagement in the world. It is therefore concerned with a much more basic intentionality, or a kind of transparent 'mindless' coping in the world, as proposed by Heidegger (1962). The challenge presented by such a study is that these understandings, being pre-cognitive and pre-reflective, will be difficult to examine in any explicit way. This means it is not possible to have direct access to them, as nurses may be unaware that they are perceiving or interpreting the world in any particular way. Instead, as Heidegger suggests, the nurses will just come to see things *as* things and to discriminate objects *as* objects, without any awareness that they are assigning any particular purposes onto these entities.

In order then, to gain access to this knowledge and understanding I, as the researcher, will endeavour to see through or past the practice of these nurses, to try and reveal this hidden knowledge and understanding. I will attempt to do this by interpreting the ways in which the nurses act and talk about their practice. My position, as both a nurse and an employee of the organisation in which the study takes place, means I am already immersed in the same 'world of practice' as these nurses. This means I may be better able to reveal the features of this world than one who is less acquainted with these practices. However, it also means that such understandings acquired, as Heidegger (1962) suggests, by our everyday engagement in the world, may be difficult for me to elucidate, as I will undoubtedly share many of the same preconceptions as these nurses. Therefore, it is not possible to interpret their

practice from a completely neutral stance, as 'interpretation is never a presuppositionless apprehending of something presented to us' (Heidegger, 1962, p. 192). This means all my interpretations will be informed by my own background knowledge and understanding. Such views are consistent with Heideggerian phenomenology, which is based on the premise that reality is constructed by human consciousness, in the way we come to perceive and understand certain phenomena.

For the purposes of this study, I will adopt a social constructivist stance in relation to knowledge, which assumes it is sustained through social processes, demonstrated in the way we interact with others through our shared language, beliefs and assumptions. From this perspective reality is constructed through communal practices, meaning all truths claims remain relative and partial (Burr, 2003). However, while suggesting that there are no ultimate truths or objective facts, there is a normative quality to many phenomena, such as occupational capability. This is because within certain cultures, common beliefs and assumptions exist that are not dependent on an individual's subjective or idiosyncratic interpretation. This means such phenomena can be explored, relative to the culture in which they exist.

4.1 Case study methodology

A case study design was selected to explore the kinds of knowledge and understanding that contribute to nurses' capability, as it is able to deal with complex social phenomenon from a 'holistic and real-world perspective' (Yin, 2014, p. 4) where 'quantification of data is not a priority' (Hammersley and Gomm, 2000, p. 4). Yin also suggests that case studies are particularly effective at looking at questions concerned with how things happen, and exploring contemporary events and situations where the researcher has little, or no, control over the variables, or the environment in which they occur. As the main

concerns of this study were to stay with the particular and the concrete, rather than the general and the abstract, this method appeared particularly appropriate. Case studies are also capable of incorporating both the specificity and complexity of actual events, as well as dealing with issues that can arise as the study progresses (Thomas, 2011). In this way, Thomas maintains, case studies are not concerned with methodological purity in the way experiments are, but rather on providing thoughtful, insightful perspectives to address the research questions.

Case study methodology can also accommodate a relativist perspective, where multiple meanings of reality can be used to explore the research topic (Yin, 2014). This methodology was very much in keeping with the theoretical perspective adopted for the study. Although this study involved nurses working in an acute hospital environment, it should be considered as an instrumental case study, as defined by Stake (1995), in that the phenomenon explored had implications that exceeded the boundaries of the case itself. Essentially, the study was concerned with the knowledge and understanding employed by nurses to inform their practice, using this case as one particular example. Therefore, the significance of the study relates to its theoretical propositions that may usefully apply to the practice of other nurses working outside the contextual boundaries of this study. So generalising from case studies is often concerned with theoretical propositions, rather than statistical ones (Yin, 2014).

4.2 The case

The study focused on a group of ten registered nurses working within an acute hospital NHS Trust in the southeast area of England. The Trust is the busiest in the county, located in an urban environment, serving a population of approximately 400,000 with almost 600 inpatient beds. The Trust provides several services including accident and emergency medicine, adult general

medicine, general surgery, maternity, trauma and orthopaedics, as well as day-surgery. The Trust employs approximately 700 registered nurses and midwives and a further 300 nursing and midwifery support staff. All in-patient services are based on one single hospital site. The sample for this study was selected from the nursing workforce providing adult in-patient care.

As the case was concerned with exploring how knowledge and understandings may be made manifest in the day-to-day practice of registered nurses, it was important to try to capture this in the contexts in which nurses worked. This was to gain a degree of insight into these contexts and explore how they dealt with situations that they commonly encountered in practice. This included observing the kind of activities they were engaged in, the kinds of equipment they used to carry out these activities, as well as the way in which they engaged with others within their work environment. Following each period of observation, the participants were interviewed to discuss these practices in more detail.

I assumed, prior to the start of the study that the participants were likely to be unaware of the knowledge that informed their practice. This is either because such knowledge was grounded on a myriad of unconscious and tacit assumptions, or else because such knowledge had become so embedded in their professional repertoire that it was no longer available for introspection. Observation was therefore considered a valuable research method to gain access to how nurses actually practised, in contrast to how they talked about their practice or, as Argyris and Schön (1974) put it, the difference between their 'theories-in-use' and their 'espoused theories' (p. 7).

Another important factor to consider in the case study was the position of myself as a researcher, who was also a nurse and employee of the

organisation in which the study took place. One advantage of this was that I was conversant with many espoused theories, or the way nurses generally talked about their work. This meant I could gain deeper insights into the practice of these nurses that may be missed by those less familiar with the environment. However, as a caveat to this, I also shared many of the biases and assumptions of these nurses and, to try and remedy this, I consciously questioned many of my initial assumptions, judgements and interpretations of their practice.

4.3 Ethical considerations

Although the study took place within the NHS, ethical approval was not required from the NHS Research Ethics Committee as the participants were members of staff and not patients. Instead, ethical approval was sought from the Ethics Panel at King's College London (appendix I, p. 190). Additional approval was gained from the local NHS organisation in which the study took place, to comply with the NHS Research Governance Framework (appendix II, p. 191). As part of the approval process, it was noted that I would come into contact with patients as I shadowed the nurses within the clinical areas. However, as I was both a registered nurse and an employee of the organisation, it was considered that I was already bound by the NMC Code of Professional Conduct (2008), and my contract of employment, to act ethically in relation to patients at all times. No patient data was collected in the study.

Permission to commence the study was obtained from the Chief Nurse of the host organisation who acted as gatekeeper to the Trust. It was also noted that if issues of professional misconduct occurred, or information was revealed to indicate that patients were at risk, then this would be reported to the professional leads in the normal way. All this information was included in the information sheet given to individuals prior to the start of the study (appendix III, pp. 192 - 194). Before agreeing to participate, individuals were made aware of

what the study would entail and, if still willing to participate, they signed the consent form. Participants' privacy and confidentiality was maintained throughout the study, as all data collection sheets, observation field notes and interview transcripts were coded, so no personal identifiable information was collected. I also considered whether the research was worthwhile undertaking, as I did not want to waste the participant's time. All data was kept in accordance with data protection legislation.

4.4 Recruitment and sampling

The nurses were recruited from areas typical of the services provided for adult in-patient care across the organisation, in its various departments, wards and specialities (see table 1, p. 68). This was to explore the practice of nurses working in a range of clinical contexts, rather than saying anything specific about a particular group of workers. As the study involved two means of data collection, participant observation and interview, the sample size was limited to ten participants, as studies with more than one research method often require fewer participants (Lee, Woo and Mackenzie, 2002).

The nurses were purposely recruited into the study according to their length of experience as a registered nurse. Half of those recruited had less than two years' experience and the other half had more than five years' experience. Of the total recruited, the five junior nurses had between six and eighteen months' experience and the five experienced nurses had practised between seven and thirty years (see table 1, p. 68). The reason for recruiting junior and experienced nurses was not to compare the two groups, but rather to explore the research phenomenon from the perspective of both groups. I also assumed that the junior nurses would be more aware of the knowledge that they used to inform their practice compared with the experienced nurses, whose practice may appear more spontaneous and instinctive to them. All participants were female

and had undertaken their preparation as nurses within British institutions, although not all participants were British nationals.

Table 1 – research participants

Participants selected - Junior (jnr) and Experienced (exp)	Number of years of experience	Clinical speciality	Professional qualification	Highest academic qualification	Length of observation period	Length of qualitative Interview
jnr 1	0.5	Emergency Department	RN (adult nursing)	Diploma	3 hrs	75 mins
jnr 2	1	Orthopaedics	RN (adult nursing)	Diploma	5 hrs	70 mins
jnr 3	0.5	Medical	RN (adult nursing)	Bachelor's degree	6 hrs	85 mins
jnr 4	0.5	Elderly	RN (adult nursing)	Bachelor's degree	5 hrs	75 mins
jnr 5	1.5	Surgical	RN (adult nursing)	Bachelor's degree	5 hrs	70 mins
exp 1	7	Critical Care	RN (adult nursing)	Master's degree	6 hrs	45 mins
exp 2	30	Practice Educator	RN (adult nursing)	Bachelor's degree	4 hrs	90 mins
exp 3	22	Dementia / Delirium	RMN (mental health nursing)	Bachelor's degree	4 hrs	75 mins
exp 4	7	Tissue Viability	RN (adult nursing)	Diploma	4 hrs	70 mins
exp 5	23	Respiratory	RN (adult nursing)	Diploma	5 hrs	80 mins

The junior nurses selected, worked in specific wards and departments, while the experienced nurses worked across a variety of wards and departments dealing with particular client groups. This included patients with wounds or pressure ulcers, those with dementia or respiratory conditions, as well as those patients identified as critically unwell. Or else the experienced nurses worked with particular staff groups, such as in supporting newly qualified nurses. These streams of work are consistent with nursing career pathways, where experienced nurses often move into management, teaching or specialist posts (RCN, 2005). From an academic perspective, three of the nurses from each group had a Bachelor's or Master's degree and the other two, in each group, were educated

to diploma level. This meant the groups were relatively homogenous in terms of educational background. However, the experienced nurses had mostly gained their degree qualifications later in their career rather than on initial registration; in contrast to the junior nurses. In addition, of the ten nurses, nine were registered adult nurses and one was a registered mental health nurse.

Prior to the start of this study I knew all the participants, most were passing acquaintances while a few of the experienced nurses were close colleagues, so initial contact was generally made by face-to-face contact. To ensure individuals did not feel coerced into participating, I ensured the invitation to participate was an open and informal one and I also stressed that participation was entirely voluntary. Potential participants were handed an information sheet to consider its contents, before agreeing to participate.

4.5 Preparing to collect data

Prior to collecting data, I ensured that I was clear about the kind of questions I was trying to answer, as this gave me some guidance on what to observe in practice. I also felt it was important to enter these situations with an open mind, to notice certain phenomena that may be worth pursuing. Data collection was seen as an iterative process, as initial data was analysed prior to further data collection. One of the concerns with case study design is that they are often conducted to substantiate a pre-conceived position, which can influence data collection and analysis (Yin, 2014). To ameliorate this, the initial questions posed were essentially *prima facie* in nature, as Thomas (2011) suggests, and thereby subject to further refinement as the study progressed.

Data collection took place over a six-month period. This involved arranging a suitable time and date to observe each participant, write up the field

notes and prepare relevant questions for the qualitative interview. Participants were recruited sequentially, so new participants were only recruited into the study once the previous participant's data had been collected and analysed. This meant only two participants were actively enrolled on the study at any one time, ensuring the research proceeded in a systematic way. This also meant emerging themes could be developed and refined as I acquired a greater sense of what to look for and what to ask with each subsequent participant.

4.6 Collecting evidence

Two methods of data collection were used to complement one another, which included participant observation and qualitative interviewing. It was felt a focus on observation alone would lose the participant's voice in the research, and only illustrate my interpretation of their actions. Conversely, interview alone may only produce espoused theories and shed little light on how the nurses actually practised, thereby triangulation of methods, as advocated by Denzin (1978), allowed for the compensation of one method by the use of the other. While it was important to note that differences may exist between how individuals say they practise and how they actually practise, both accounts were considered valid as they can represent different aspects of the phenomenon under examination.

4.7 Participant observation

Participant observation was undertaken to capture action in real time and to provide a degree of contextual and situational authenticity (Yin, 2014). The observation period was unstructured and therefore congruent with the social constructivist paradigm that recognises the 'co-construction of knowledge between the researcher and the researched' (Mulhall, 2003, p. 306). Participant observation also provided an opportunity to explore the nature of the phenomenon being examined, rather than necessarily the 'magnitude and

distribution' of it (DeWalt and DeWalt, 2011, p. 2). In this study, I set out to shadow the participants as they undertook their daily work activities. Following their consent to participate in this study, the participant and I agreed a mutual time when it was convenient for me to observe them in practice. This often involved meeting the nurses for their morning handover and shadowing them for a period during that shift. On several occasions, I was directly involved in many of these nursing activities myself. This provided a good opportunity to see what challenges the participant faced in their everyday work, what tools and artefacts they paid attention to, as well and how they interacted with others; including their patients and colleagues. I was also able to observe how the participants dealt with certain situations, in terms of what judgements they made and what decisions they came to. The research was therefore grounded in the reality of practice.

DeWalt and DeWalt (2011) say participant observation places the researcher in a situation in which they have very little or no control, in that they must deal with events as they unfold. While this is true, in that what occurs in practice cannot be controlled, however, I felt very much in control using this method as I could choose what things to observe, rather than relying on the participant to relate things to me. In many ways, I felt participant observation reflected a more natural way of finding out about this everyday phenomenon. DeWalt and DeWalt also say this method has the potential to access knowledge that is tacit and embodied, rather than explicit and intellectualised, thereby suiting the research purposes of this study. However, the role of participant and observer could be challenging at times, as when participating I had less opportunity to observe. Nevertheless, actual participation allowed me to gain more contextual understanding of the nurses' practice, giving me more of a sense and feel of the situation, which may be lost if I were only observing. Participation also allowed me to blend more naturally into the practice setting and promote more authentic behaviours in those that were being observed.

Each observation period lasted between three to six hours and correlated with a natural break in the work of the participant i.e. the period between morning handover and their first break (see table 1, p. 68). This varied according to the nature of the job and the particular circumstances that were occurring on the day the observation took place. However, it was considered long enough to get a sense of the variety of work the nurse was involved with, and allowed time for me and the participant to settle into a natural way of working together, without either party feeling awkward. While acknowledging that those being observed may not always perform naturally, Mulhall (2003) maintains that this effect is often exaggerated and that any initial pressure to perform gradually wears off as the individuals become involved in their everyday activities. This was certainly my finding in this study. During the observation period I also wore my clinical uniform, which allowed me to blend in with the environment, however it also meant I had to explain to colleagues that my purpose was to shadow the participant and not to act as an extra member of staff.

Throughout this stage of data collection, I became aware of the importance of 'fitting in', 'active seeing' and informal interviewing, as emphasised by DeWalt and DeWalt (2011, p. 21) in such situations. Also as an experienced clinical educator, I felt relatively comfortable with my ability to enter new environments and observe the practice of others. However, I felt I needed to make better use of my short-term memory, in terms of recalling events to write up later in the field notes; although brief jot notes were taken at the time. My familiarity with the clinical setting proved an advantage as I could anticipate the sort of activities that would naturally occur within that environment. This could also be seen as a limitation, in that many things would appear so much part of normal practice that I may not see them as anything particularly unusual, or be able to develop a critical stance towards them. Therefore, it was important to try 'seeing old events with new eyes' (DeWalt and

DeWalt, 2011, p. 96), while at the same time recognising that all observation is partial, in that what we observe is strongly influenced by our own intrinsic interests and motivations (Agar, 2008). Establishing rapport with the participants was relatively easy, as I knew them all prior to undertaking the study. Nonetheless, I was aware that the participants, especially the junior ones, may feel anxious about being observed, or feel their practice is being judged in some way. As a consequence, every attempt was made to try and make the nurses feel at ease by ensuring I was as unobtrusive as possible. I also actively participated in practice on occasions, so participants did not feel they were under constant scrutiny.

I only took brief jot notes during the observation period and these consisted of reminders of the sequence of events that had occurred that day. In some instances, key phrases or comments were noted, to serve as an aide-mémoire, to write up fuller notes once I had left the clinical field. For the majority of this period I was engaged in interacting in the environment, so had little time to reproduce verbatim conversations or detailed notes on any specific events. I also felt taking notes may distract me from being open to what was occurring in practice at that time. Instead, I made a conscious decision to 'go with the flow' and become 'saturated in experience' (Mulhall, 2003, p. 311). This involved immersing myself in the feelings and emotions generated throughout the observation period, which also helped me to recall the events once I had left the clinical area.

There was also a fine balance to maintain in the observation period between being an observer and then a participant. Shadowing the more experienced nurses enabled me to adopt a more observational role, as their work was much more focused on dealing with specific issues in a sequential fashion. In contrast, shadowing the junior nurses within general ward areas and departments involved more participation on my part. This was because their

work was more diverse and they were constantly being called to deal with one situation to the next, and it was felt constant shadowing was inappropriate. This meant I became actively involved in clinical care but always remained sensitive to what the participant was doing in these circumstances. I also had, as a result of my experience, a general or intuitive sense of what was appropriate or not appropriate to observe. For example, one participant had to relay sensitive information to a relative and in this instance I refrained from observing them, as I felt my presence would be too intrusive. However, there is a danger that the participant role can overpower the observer role, as noted by Yin (2014), and I was always mindful of the specific purposes in which I had entered the clinical field. During the course of the study I felt I became better at noting and recording specific events, as my skills in observation and short-term memory improved, this also made me better at negotiating when I should be observing and when I could be legitimately participating.

Following the observation period more extensive field notes were written up from the jot notes (appendix IV, p. 195). This included listing the key activities, which individuals were present, what artefacts were attended to, any notable key phrases or expressions, or any particular interesting events that had occurred. In addition to this, I also noted any specific impressions, thoughts or concerns I had, and these field notes represented the first level of analysis. According to DeWalt and DeWalt, participant observation is an iterative process that involves the 'development of a tacit understanding of meanings, events and contexts by the researcher' (p. 158). Therefore, while it was important to keep a record of the field notes, it was also felt important to keep a record of the ideas generated throughout the research process to gauge how understandings had changed. DeWalt and DeWalt refer to this as head notes that are important in driving the research questions. From these observation periods I was able to compose a series of questions to discuss with the participant later on interview (appendix V, p. 196).

4.8 Interviews

All interviews were arranged with the participant following the observation period. One of the advantages of interview, as a research method, is that it allows the researcher to focus on key issues in a direct way, with the potential to reveal personal insights into an individual's perceptions and attitudes (Yin, 2014). The interviews took the form of guided conversations, rather than structured questions, as I discussed issues that had arisen during the observation period with the participants. Each interview lasted between forty-five to ninety minutes (see table 1, p. 68) and were held in a private room in the education centre at the Trust. All of the interviews were audio recorded, after seeking consent from the interviewee, and all interviewees completed a data collection sheet prior to interview to provide background information on their clinical experience and academic qualifications. These interviews took place as close to the observation period as possible, ranging from two to four weeks later. The field notes helped to remind the participant of certain incidences that had occurred in practice, however on many occasions the participants had almost no recall of these events. This may be because they appeared to be such ordinary, everyday occurrences. I did not consider this to be a problem as, having observed their practice, I was able to use this information as a stimulus to discuss other events that the practitioner had experienced in practice.

All questions prepared for the interview were generated from the field notes and a brief interview schedule was drawn up for each participant (appendix IV and V, pp. 195/196). The questions varied between participants due to the different events and situations witnessed. However, many questions were included in all interviews to explore these contexts such as 'how did you know how to act in that situation?' or 'how did you know that things were going well/not so well?' I also asked more general non-specific questions, such as the role of emotions in guiding their practice, or how they felt they had learnt from mistakes or errors. These questions proved useful in prompting participants to

talk about significant experiences that had guided their professional development. As subsequent participants were interviewed, particular questions were introduced that had proved useful in previous interviews, in this way emerging themes could be explored.

The challenge for me as an interviewer was to keep the interviewee focused on topics that related to the research question, but also allowed them an opportunity to speak freely. The interview was therefore conducted in a conversational style, in that I was guided by the interviewees' responses to pursue particular lines of enquiry as one would in normal conversation, as recommended by DeWalt and DeWalt (2011). It was also important to get a sense of how the participant perceived the world and what was meaningful to them and to consider 'what is the interviewee trying to say about this issue or this phenomenon?' According to Yin (2014), interviews should only be considered as verbal reports in that they can be subject to 'bias, poor recall, and poor or inaccurate articulation' (p. 113). This was why it was useful to have observed some of the practice prior to the interview.

Not all participants were consciously aware of every aspect of their practice. Many were unable to recall the detail or subtleties of their practice as I recounted them. For example, all the nurses appeared to communicate with patients very effectively however, when I tried to discuss these practices with the nurses, they were generally unaware of what they had said or how they had said it. This may be because these practices are such a natural way to perform that it is no longer available for introspection. Participants also found it difficult to explain how they had learnt to undertake certain activities within their practice. In such instances, they often reverted to espoused theory, which often contradicted how they actually practised. For example, some participants recounted the importance of supporting colleagues to make their own decisions, but were observed in practice making the decisions on their behalf.

There was also a commitment on my part not to interrupt the free flow of the interview, by asking for too much detail in terms of who, what, when and where. At times, I did ask for clarification if something they said had not been understood. This was usually to clarify some of the abbreviations or terminology used. However, I did not always ask for clarification of terms such as 'knowledge' or 'skills', and instead interpreted them according to the context in which they were used. I was also conscious of actively listening to the interviewee in order to follow up with appropriate questions to explore their ideas further. On occasions, I offered examples from my own practice, as well as my own thoughts and observations on particular events or situations. This meant the participant and I were able to explore some of the ideas together, acting as co-researchers and joint learners. All interviews were transcribed by myself and comprised a further step in data analysis.

4.9 Data analysis

The process of data analysis can be equated with data reduction which, Miles and Huberman (1994) say, involves 'the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written-up field notes' (p. 10). The theoretical perspective of the study guided this reduction and analysis as it meant certain data, perceived as being more significant or relevant, was prioritised throughout the analysis. Data reduction therefore occurred throughout the entire research process, in that it informed what I observed in practice as well as what I focused on in interview.

Data was analysed using thematic analysis that is a method of 'identifying, analysing, and reporting patterns (themes) within data' (Braun and Clarke, 2006, p. 79). This method of analysis has been criticised for being too descriptive and not sufficiently interpretative, however when used within a theoretical framework, as this study was, Braun and Clarke (2013) claim it can

support an interpretative approach to analysis. The entire data set comprised the field notes and the transcripts, which I analysed to look for patterned responses to particular phenomenon. In this way, I began to identify and create themes that appeared to address the research questions. Thematic analysis also allows individual interpretations of reality to be analysed from the data (Braun and Clarke, 2006) and is therefore congruent with the social constructivist perspective adopted for this study.

Analysis was influenced by my use of the term 'phenomenological understanding', which is derived in part from Heidegger's account of Being-in-the-world, Merleau-Ponty's account of embodied cognition, as well as Searle's account of constitutive rules in the construction of social reality. Capability, from this phenomenological perspective, anticipates that individuals create their own reality and meaning through interacting and engaging in the world. In this sense, I was particularly interested in the way the participants appeared to perceive or interpret their world, how they dealt with objects and equipment by the 'assignment of function' or treating them, in Heideggerian terms, as 'ready-to-hand' entities. I was also interested in how they interacted with others, or what Heidegger refers to as 'the-They' or '*das Man',* as well as looking for evidence that might suggest that the nurses' practice was rule-governed.

This meant there were many *a priori* categories, to inform the analysis which Dewalt and DeWalt (2011) term as indexing. However, these categories were generally intangible and could only be drawn out of the data set through interpretation. Therefore, analysis involved looking for themes that Boyatzis (1998) terms as latent and implicit in the data set; rather than those that existed on an explicit or semantic level. To begin to draw out these latent themes, I added extensive commentary to the transcripts to gauge their meaning in relation to the theoretical perspective of the study (appendix VI, p. 197). Also, rather than undertaking line-by-line analysis, I looked at discrete sections or

episodes of care i.e. preparing a medicine or talking to a colleague, in order to keep the interpretation relative to the context in which they occurred. Throughout this analysis underlying assumptions, ideas or concepts were identified and coded. This meant not all the categories were *a priori* as, while certain themes and patterns could be anticipated, how they were manifested throughout the data set was not.

In order to help draw out these themes I examined the data to look for particular patterns, insights or concepts that could be interpreted from it. This initially began by memo writing to 'determine the strength of the empirical support for these themes' (Yin, 2014, p. 126). This involved free-text writing to try to draw out meanings about what was being said, what was being assumed as well as how these ideas connected with each other. This helped me to look beyond the data presented in the interview transcripts and to constantly interrogate the data in terms of asking questions such as 'what is the interviewee seeing here?' or 'what are they taking for granted?' While undertaking this analysis, I recognised that I found some transcripts more difficult to analyse than others. For example, where the job role of the participant was more familiar to me, it became more challenging to draw out underlying assumptions as I often shared these same assumptions. This meant I was conscious of trying to develop distance from the texts and begin to approach the analysis as a researcher, rather than as a nurse. From this initial analysis, I was able to code the data according to several categories of meaning. Initially only the first two transcripts were coded, prior to further data collection, once more data was collected these codes were reviewed in light of this new data. This meant coding took place gradually and cumulatively as the research progressed. Following coding, codes were developed into themes. Not all initial codes developed into themes as some were combined with others or were broken down further, whereas others were discarded altogether.

While it was recognised that theoretical ideas informed the coding of the data, I was aware that there could be a tendency to only draw on certain data that appeared to support these theoretical ideas, a common fault of this type of research (Yin, 2014). For this reason, I tried to adopt a more critical stance towards the data and not be blind to other interpretations or rival explanations that could also be inferred from the data. In this way, I was able to test any developing ideas and themes. These themes were then reviewed to ensure they offered something significant to address the research question, such as a patterned response to certain phenomenon. The other thing to note was how reoccurring the theme was across the entire data set. However, the relevance of a theme was not dependent on quantifiable measures but rather its significance to the study at large (Braun and Clarke, 2006).

I also created a case study database to give an overview of how the analysis had taken place, which took the form of a simple spreadsheet (appendix VII, p. 198). This included information about which participant the data was drawn from, what page of transcript and whether it was collected via observation or interview. All initial and subsequent codes of that data item were also recorded, as well as the particular theme that the code developed into. This proved an effective means to manage all the data items and review the development of the themes from the original material. All data items were identified according to which participant they came from, whether an experienced (*exp*) or junior (*jnr*) nurse, as well as the page of transcript the data was drawn from e.g. *jnr 4*:22 (*junior nurse 4, transcript page 22*). However, within the final research report the transcript lines were removed, so the data items were only identified according to which participant they related to. The database therefore contained a record of the 'missing' data, if subsequent review of the research were required. This helped to set out the sequential steps in the data analysis and interpretation process, as recommended by Yin (2014).

Once I had coded all the data and developed the themes, a second reviewer looked at three of the original coded transcripts and compared them with the coding guide (appendix VIII, p. 199). As a result, they were able to make a judgement about the consistency of interpretation I had employed to arrive at these themes. The second reviewer was familiar with the research methodology and worked as a professional educator, but did not have a healthcare background. It was recognised that this reviewer would not necessarily see the same things in the data as myself, due to the diversity in their background and experience, but could logically follow how I had arrived at the themes. I attempted to adopt a consistent approach towards data analysis across all the transcripts, as advocated by Braun and Clarke (2006). This often meant revisiting the data repeatedly, to ensure consistency in interpretation and coding, as ideas developed. The interpretative nature of the analysis was therefore congruent with the social constructivist perspective adopted for this study.

4.10 Issues concerning credibility

Common ways of interpreting the quality of a research study are through constructs such as reliability and validity; however, such terms are not particularly appropriate for the interpretive nature of this study, where no objective facts or absolute truths are assumed. Nonetheless, this does not mean that my views and opinions were purely individual and idiosyncratic or that I was not considered in my approach to the study. Instead, the quality of the study in terms of truth claims is often judged, as Thomas (2011) suggests, by the community of scholars and practitioners who share the same academic, social and cultural norms as that of the researcher. In this case study, attention was paid to clearly articulating the research question and ensuring thoroughness and rigour in both the research design and the analysis of that data. For these reasons, a chain of evidence was maintained, as advocated by Yin (2014), to set out the specific steps undertaken to collect and analyse the data, which included details in relation to the context in which the research took place.

Attention was also paid to the interpretation of the primary research data to develop themes that could be reasonably drawn from the data and that are consistent with the theoretical perspective of the study. Finally, as Yin (2014) suggests, it was important to demonstrate that a plausible and coherent argument was developed throughout the study that could hold up to scrutiny by a reader of the research. From this analysis, three key themes were identified that appeared to relate to the research questions, in revealing the kind of knowledge and understandings that may importantly contribute to nurses' capability. These were entitled '*learning to see, feel and do', 'learning the right things to do'* and '*developing a constitutive understanding'* and these three themes will be explored more fully in the proceeding chapters.

Chapter Five – Learning to see, learning to feel and learning to do

From the data analysis there was a clear sense that the knowledge the nurses were drawing upon to inform their practice was much less definitive than official accounts often recognise. This meant the nurses were not relating to any facts or truths that existed independently from their conceptual schemata. Instead, they appeared to be constructing ways of seeing and interpreting their environment, relative to the way others saw and interpreted that same environment. This chapter will look firstly at how individuals learnt to 'see' what is important or significant within their context of work and how they employed schemata, or plausible models, to guide their actions. Secondly, it will explore how individuals became emotionally attuned to practice situations, through the development of intuitive and tacit understandings that allowed them to pre-empt and avert catastrophe. Finally, it will examine how learning also occurred through the bodily engagement in tasks and the manipulation of objects and propose that, by undertaking such practices, new knowledge and understandings were created.

5.1 Learning to see

There was evidence in the nurses' accounts to suggest that they perceived practice in a particular way and were employing schemata to interpret meaning from these situations, as predicted by Abercrombie (1989). When the nurses spoke about their practice, they demonstrated a degree of certainty about what they saw as important and relevant in any given situation. However, what they were seeing were not necessarily objective 'things' but rather abstract conceptions, meanings and interpretations that they had imposed on their practice. These ideas will be explored in examples 1.1 to 1.7.

Perhaps one of the first things a healthcare practitioner needs to learn is what sickness is and what an unwell patient looks like in relation to their work environment. In this first example, the experienced nurse is referring to the practice of a junior colleague who has yet to learn what 'critically unwell' means.

Example 1.1: *'that's not critically unwell'*

'New doctors particularly do not know what sick actually is. I was on (duty) the other night and there was a junior doctor who bleeped me and said a patient was critically unwell, they've got a systolic of 96…and I was like 'that's not critically unwell!' I didn't say that…. because I didn't want her to feel that she can't escalate if she needs a bit of assistance… so…essentially after probing her…she was in such a flap…. she actually needed a cannulae putting in and had bleeped the anaesthetist and they couldn't come as they felt they weren't critically unwell either and then she's had a bit of a confrontation over the phone so her back was up already. So I sort of said 'calm down we can get that cannulae in', and the anaesthetist had thought perhaps they would come down and do the cannulae. So when I got there this house officer had written up metaraminol and said 'we need to give this now'. 'Metaraminol…….!' and she says to this junior nurse 'go and get me some metaraminol' and I said 'Whoah! No we're NOT giving metraminole, definitely not…. and if we are she needs to go to HDU (High Dependency Unit) and she does not need to go to there, she needs fluids at the minute ……so I sort of stayed there and helped her to calm down and see things with a little bit more perspective….and then she was alright, yes and she was a little calmer and able to put a better plan together' (exp1).

In this example, the nurse is recounting her experience of working with a junior member of staff. To an experienced practitioner a systolic blood pressure of 96 is low, but not critically low, and would normally be treated by increasing the patient's fluid intake. Therefore, it is an everyday common occurrence

within the clinical area and can be managed locally without requiring assistance from senior teams outside of that environment. This is the 'normal way' of going about such matters, significant within Heidegger's (1962) notion of 'Being-with' or 'the-They'. Heidegger suggests this pervades every aspect of our being, as we learn the most appropriate way to speak, to dress or to eat, or in this case, to deal with low systolic blood pressures, as part of *das Man*. Not only is the junior practitioner unable to see or relate to the clinical situation in the same way as their clinical colleagues, they are also unable to deal with it in the sense that they prescribe a disproportionate therapy relative to the patient's condition. In this instance, prescribing a drug that should only be administered to treat extreme hypotension. This indicates that the junior practitioner has no way of gauging what '*critically unwell*' means relative to the clinical context. So knowing 'what is normal' is as important as anything else within the clinical area and the role of the healthcare worker is to determine not just what 'sick' is, but how it is distinguished from the sicker or the sickest patient.

From this example, it would appear that learning what is normal and appropriate in dealing with hospitalised patients is developed through our engagement and participation with others, already involved in these same activities. This supports the claims proposed by Lave and Wenger (1991) that learning is a social process, as there appears to be a shared sense amongst practitioners as to what behaviours constitute capability within a particular context. This is because in this situation: the experienced nurse, the anaesthetist and even myself as the researcher, to whom this story is related, can identify that the behaviour of the junior colleague is not in keeping with what would normally be expected from a capable individual.

This example also suggests that we do not attend to situations from a neutral perspective, but rather with a certain kind of mental preparedness (Abercrombie, 1989). It would be wrong to assume that the junior member of

staff has not employed any schemata, or adopted a particular perspective in relation to the situation, due to their relativeness newness to the environment. In fact, they demonstrate a very clear and distinct perspective on how they perceive and interpret the situation. We can therefore assume that the junior practitioner is not attending to the situation 'schemata-less' (Lum, 2009) but rather that they have not been able to modify or adapt their schemata as yet, to one that is more congruent with that of their fellow practitioners.

The way in which nurses perceived and interpreted situations in practice also appeared to be influenced by their experience, in that nurses with a different healthcare background might see different things in the same situation. For example, one participant felt the general ward nurses, while attuned to signs of respiratory and cardiovascular deterioration, were less able to recognise neurological deterioration in patients. She contemplates why this might be the case.

Example 1.2: '*people are used to seeing people asleep*'

*'I don't know, I just think people are used to seeing people asleep possibly, they don't see it as being an issue, they are just unwell so they're sleeping they're not unconscious as such…., but it is something the whole team has found…quite often when we get a phone call 'their obs are this, but they're not responsive', and when you probe them further it turns out that they are totally unresponsive.**….** We did have a patient the other day that someone asked just that. 'I'm calling you to ask if we can just put them on the LCP (Liverpool Care Pathway)' and we were like NO…..NO!' (exp1).*

In this example, the experienced nurse says that a patient's reduced level of consciousness is not seen as anything particularly untoward by certain ward staff. This might appear rather unusual, as reduced levels of consciousness outside of a hospital environment would be considered as something extremely concerning. However, as nurses inhabit a world where patients are often seriously unwell, reduced levels of consciousness are not particularly unusual, as people may be recovering from anaesthesia or on heavily sedative medications. The nurses may also assume a patient is merely sleeping, as this is a normal everyday activity within the hospital environment. This means that the nurses do not appear perturbed by this phenomenon. In fact, when the nurses do identify a reduced level of consciousness, this participant is suggesting that they do nothing, in terms of considering the reason for it, but rather assume it is a natural and almost inevitable consequence of the patient's underlying medical condition. So according to this participant, the general nurses have learnt, probably not explicitly, that reduced levels of consciousness are not something to be particularly alarmed about. This implies that the nurses have developed perceptions and 'habits of thinking' (Abercrombie, 1989) that affects how they perceive and engage with the 'world of practice'.

The question then is why is this participant 'seeing' unconsciousness from a very different perspective from her nursing colleagues? The reason she gives is her experience in caring for '*tubed and ventilated patients'* in intensive care settings, where assessment of sedation levels are paramount in making a decision as to whether the patients '*are actually going to be able to maintain their own airway' (exp1).* Therefore, it is probably this nurse's particular experience in caring for critically ill individuals, which has made her highly alert to assessing for a reduced level of consciousness; a perspective not perhaps shared by her general nursing colleagues. This demonstrates that what is, or is not, considered normal is relative to the context in which individual's work. This also means, as a nurse moves across various clinical settings and medical specialities, with different treatment priorities, they will need to readjust their

schemata to match the circumstances of their new work environment. The next example 1.3 illustrates precisely this, as one nurse recalls how she learnt what 'normal' is, in relation to arterial blood gas readings for her new client group.

Example 1.3: *'abnormal is normal for them'*

'…because I worked in intensive care doing blood gases… it's funny. Intensive care was very good in teaching me to interpret blood gases but a lot of intensive care is about correcting everything that's wrong because the patients are sedated and ventilated and you're correcting everything. Then once I came into respiratory care it's different because you can't correct what's abnormal in some patients as abnormal is normal for them……..so I had to change my way of thinking.

because they're all chronic….?

Yes - they may have carbon dioxide levels of 7 or 8 normally so to correct beyond that is very difficult for them as they get better…….yes it's been a very interesting thought process just over the last five years, learning to try and work out what's normal for them' (exp5).

In this example, the nurse appears to be responding to a certain kind of saliency about what is important or relevant in caring for patients with chronic respiratory conditions. Benner (1984), Dreyfus and Dreyfus (1986) and Eraut (1994) suggest that recognising what is salient in any situation is characteristic of expertise. It is also important to note that what is salient in one situation, may not be so in another, so capability involves the modification and adjustment of our sense of what is salient, relative to the situation. As Dreyfus and Dreyfus note,

> …because of the performer's perspective, certain features of the situation will stand out as salient and others will recede into the background and be ignored. As events modify the salient features, plans, expectations, and even the relative salience of features will gradually change. No detached choice or deliberation occurs. It just happens, apparently because the proficient performer has experienced similar situations in the past and so associates with present situations plans that worked in the past and anticipates outcomes that previously occurred
>
> (Dreyfus and Dreyfus, 1986, p. 28).

While examples 1.1 to 1.3 appear to illustrate the way in which an individual may come to perceive, interpret and understand situations in practice, they will also need to come to an understanding of the meanings and purposes imposed on physical objects as well; relative to that practice. This is because objects are not seen purely in terms of their physical properties, but rather in relation to the activities and practices in which these objects are used. In the following example, the nurse is asked to get a piece of equipment for her colleague; however, the nurse is not certain if such an item even exists.

Example 1.4: '*Is there such a thing as this thing?*'

'the other day someone said to me 'can you get me high flow oxygen nasal specs?' I don't know if they existed to be honest and I did think, is there such a thing as this thing? But I went with it although I did think 'are they testing me there?'.....I thought …….what am I going to do here because it was one of the speech and language therapists …… she's not obviously winding me up here, she doesn't know me. So I said 'O.K. I'll just find out for you', and I think 'what am I going to do?' I'm just going to pretend I know what they are….. that there is such a thing as this thing – that it is a something and I went up to one of the nurses and asked 'where will I get the high flow nasal specs?' and she said 'they are in the cupboard there'……. yes, so I bluffed, I had to bluff' (exp2).

In this example, a very experienced nurse has come across something that conflicts with her normal schemata for interpreting objects within the clinical environment. In general, nasal specs are used to administer low flow oxygen with higher levels of oxygen administered via oxygen masks. This demonstrates that for this nurse, the terms *'high flow'* and *'nasal specs'* appear counterintuitive and so conflict with her normal schemata of how to administer oxygen. In this scenario, the activity of administering oxygen appears to be related to, what Heidegger (1962) may term as, a whole integrated world of involvements, associated with the equipment and the routes through which it is delivered. This may also involve consideration of oxygen percentages and flow rates, as well as any potential risks such as respiratory depression, risk of haemorrhage to the nasal blood vessels etc. Therefore, the way this nurse relates to this piece of equipment is not as an object in itself, unrelated to human purposes, but rather in relation to a much wider world of meanings and significances. In this way, the nurse can be seen as 'assigning function' to this object, an idea postulated by Searle (1995), in that she is imposing meaning on the object in relation to the activities in which it is employed.

This accounts for her apparent confusion when asked to retrieve an item that is not congruent with her current understanding of how to administer oxygen. In this instance, the normal way that this nurse relates to this object i.e. nasal specs for administering *low* flow oxygen, appears to have broken down. Heidegger maintains that in most situations, when such assignments are working well,

> …the assignments themselves are not observed; they are rather 'there' and we concernfully submit ourselves to them. But *when an assignment has been disturbed* – when something is unusable for some purpose – then the assignment becomes explicit (original italics)
>
> (Heidegger, 1962, p. 105).

This indicates that we have a normal way of going about and dealing with objects that we come across within our occupational practice, which is essentially pre-cognitive. However, when there is a challenge or breakdown in the normal way we relate to such objects, Dreyfus (1991) maintains that we are obliged to change from a state of absorbed coping to one of conscious deliberation. Interestingly, if this were a novice practitioner no such confusion is likely to have arisen, as they may not have employed such schemata or assigned such functions to this object.

What is also interesting in this scenario is that, when presented with this apparent incongruity, the nurse is rather at a loss to know how to respond. Nonetheless, she is able to hide what she feels as her ignorance, and carries on through '*bluffing*' and tentatively asking someone else where such an item can be found. In this example, the practice of the nurse appears to be very much guided by the actions and behaviours of her colleagues. So even though uncertain if such an item exists herself, the behaviours of her colleagues in requesting the item, and the other in telling her where to obtain it, convinces her that it does. So the participant is able to manage the situation and avoid any embarrassment by following the socially appropriate modes of behaviour, which Heidegger (1962) terms as 'the-They' or *das Man*, in that she is able to pretend or go along with the pretext that such an item exists, as she has learnt what 'one does' in times of uncertainty. This demonstrates a particular concern not to stand out from the norm, as well as a natural tendency to want to 'get ourselves and everyone else to believe, or better, to act as if, there is a right way of doing each thing' (Dreyfus, 1991, p. 153).

In a similar way, an individual can come to understand the meaning of a new word or expression by observing the way in which others talk about it. These new meanings and understandings are then incorporated into an individual's own repertoire, indicating an important part of occupational

capability involves learning the language commonly used in that environment. In the next example, the nurse is considering the nature of 'delirium' and, although the term has existed in medicine for some time, it is only in more recent years that it has been consistently applied to conditions where individuals have become temporarily confused, following illness or trauma. This is undoubtedly due to the recent official research and guidance into the condition published by NICE (2010).

Example 1.5: *'it identifies it as a real condition'*

'I suppose in a way it's something I've known about for quite a long time but did not know I knew it....., we'd often have patients in the community that became really unwell very suddenly. Just suddenly really unwell and confused and you'd get a phone call from the daughter as their relative is climbing the walls, they've tried to get out last night, which is completely out of character. The first thing you'd say is 'have you phoned the G.P?' 'Have you got a urine sample?'....and I suppose I learnt to say that because I knew....that that sort of thing affected people, it was always urine infection or chest infection, I didn't know much more than that. A chest infection, more often than not, or they had a urine infection and it was treated and things settled down again.... and it was only ....it was kind of I can't remember when I learnt that...I kind of always knew that.....so I read up about it (delirium) and found it really hugely fascinating and from that moment I thought....ah...this is clearly what's been happening to these people all this time...and learnt a bit more about it and then .....I just got...fed this information by these experts.....I suppose because it's NICE guidelines it is recognised as delirium, everyone calls it that and they still do say acute confusional state, acute or chronic confusional state...but the big drive is, not my drive, but the big drive is that - we've got to call it delirium ...

Yes so it sounds like a 'proper' diagnosis...?

Yes..yes…yes it identifies it as a real condition, as a medical emergency to pick up on it so it helps focus it' (exp3).

In this example, 'delirium' has become specifically labelled and can now be referred to as 'a something', as it has been validated as a real phenomenon. Through naming it a dialogue is opened up, which allows one to talk about it, recognise it and deal with it. Consequently, delirium can now be legitimised as a '*medical emergency*', as a something that one needs to be concerned about. This means there are clear guidelines and procedures for measuring, monitoring and dealing with it in an overt and explicit way. Delirium has therefore become a 'thing' and nurses can conceive of it as a definitive thing, rather than an untoward side effect of something else that always occurred. The condition itself has not changed, but the individual's ability to see, interpret and relate to it has. This emphasises the importance of language and the use of words in creating schemata. As Merleau-Ponty (2014) notes, the way we use words is analogous to the way we use tools 'as for the sense of the word, I learn it just as I learn the use of a tool – by seeing it employed in the context of a certain situation' (p. 425).

The use of language within the work environment supports Wenger's (1998) notion of reification, where particular communities of practice will attach meaning to certain tools, concepts and activities relative to that practice. Such phenomena can then become social facts (Searle, 1995) or public norms (Heidegger, 1962), relative to the group where those meanings were created. This will allow group members to recognise certain phenomena *as* phenomena. Heidegger maintains that we may not necessarily be aware of the development of such norms, as they require no justification. This is because 'the common sense of the 'they' knows only the satisfying of manipulable rules and public norms and the failure to satisfy them' (Heidegger, 1962, p. 334). In this way, individuals will just use terminology, such as delirium, without questioning the

nature of the phenomenon or how it came into being, but rather take it as a given. For example, the nurse in this instance appears unaware of how she came to use the term, in that she says *'I suppose in a way it's something I've known about for quite a long time but did not know I knew it…….'.*

Evidence was also found to support the view that individuals employed schemata in relation to how they performed certain tasks. During the observation period a lot of time was spent shadowing nurses as they administered medicines on their drug rounds. The junior nurses said this was one of greatest challenges of becoming a registered nurse. However, the challenge is not limited to having the most appropriate pharmacological knowledge to administer medicines safely; it also involves the practical task of dispensing medicines and being able to 'read' a drug chart. One of the participants was able to talk about her growing confidence in carrying out this activity in example 1.6.

Example 1.6: *'you know what you're looking for'*

'And does administering medicines become easier since you've been giving them for a few months now?

Yes if you know what you're looking for… yesterday…..one nurse was trying to give an I.V. (intravenous) antibiotic that was signed for and you can easily spot what has or what hasn't been signed for. So you just know what you are looking for on the drug chart.

So you would begin to know what to look for on a drug chart?

Yes….so you sort of get a guide and you just know this hasn't been prescribed or a person will come to you and say I need to give this medication and you can say it's been changed……look.

Yes so you get to see patterns?

Yes so like it was I.V. before and now it's oral and they'll come to you still thinking that it is I.V.…because they're going by their list, they are looking for you to come and check this drug with them and you just say it's changed, its oral now……' (jnr3).

In this example, the nurse is experienced in dispensing medicines using the prescription charts. She can anticipate from the chart what drugs need to be given, as '*you know what you're looking for*' and where on the drug chart they would be prescribed. The nurse is employing schemata, or a plausible working model, for how to carry out this activity. She recognises the patterns to look for on drug charts and can pre-empt what she intends to see there. This means she can instantly identify which medicines have been given, or '*signed for*', which have been changed and which still need to be dispensed. Her knowledge is also based on her familiarity with treatment regimes, in knowing when an intravenous drug (*I.V.*) should be changed to an oral one. This ensures greater speed and accuracy in carrying out the medicine round, as she learns what to 'look out for' and what to be aware and vigilant of. This also indicates that pharmacological knowledge of drugs is only one component of proficiency in dispensing medicines, as it also requires familiarity with the activity to 'see' and employ particular schemata in relation to this activity. As a result, the nurse undertakes the medicine round with a certain kind of background understanding, which means she is 'ready for certain things and not other things' (Searle, 1995, p. 136). For example, she is ready to see prescriptions of I.V. drugs changing to oral prescriptions and perhaps not necessarily the other way around, in a way that her colleague is not.

While schemata, or this sense of mental preparedness, can help practitioners to understand and interpret situations they can also lead to errors

in judgement. This is because individuals may only 'look out for' certain phenomenon and remain oblivious to others that may be pertinent to the situation. For example, one nurse recalls caring for a patient who had meningitis but remained undiagnosed, as they did not demonstrate some of the classic symptoms, such as petechiae, commonly associated with this condition. However, on reflection she recalls that there were enough clues in the original presentation to make this diagnosis a possibility, as she recounts in example 1.7.

Example 1.7: *'it's just about being a bit of a detective'*

'we got a call from infection control and occupational health to say that this lady should have had antibiotics and it's a week and a half too late now, but she was a dementia lady who had presented with confusion, increasingly confused which people do when they have infections…….. but yes she ended up having meningitis and no other clinical symptoms whatsoever….but I do remember saying to the registrar, writing him a note actually, that her chest was clear, her urine was clear and she had no other obvious signs of infection, so should we not try and find out where this sepsis is coming from and he said well she's on a general antibiotic so it should cover whatever it is.

So the clue might have been…?

That as the infection wasn't from anywhere else so possibly it could be coming from there.

So do you think now you've seen that, you've experienced that it changes your perceptions….?

Yes because if I see someone else now I'll be thinking, it could be meningitis….. with people as we're all totally different….so we just have to…it's just about being a bit of a detective really about trying to find out what's going on' (exp1).

In this example, certain clues are present, the patient has sepsis yet the absence of a chest or urine infection indicates that the infection is located in another part of the body, making meningitis a possible, but not obvious, consideration. Likewise, the presence of confusion, although indicative of an infection, is also complicated by the fact that the patient has dementia. The schemata the nurse has employed, relating to the presentation of meningitis, has not served her well as the diagnosis was missed. This leads her to conclude that in the future she will be more vigilant to look out for this condition, having experienced its presence in a non-overt form, perhaps modifying her schemata as a result.

This illustrates that while schemata can be useful for individuals to make a rapid assessment of the situation, based on their experiential knowledge and how things have worked out in the past, they can be limited if they are not modified in response to feedback from the environment in which they are used. This was the concern identified by Abercrombie (1989) in her work with medical students, in that schemata can lead us to interpret situations with particular 'habits of thinking' that may prevent us from seeing other, relevant phenomena within a situation. In a similar way, Klein (2009) says that our interpretation of situations can result in errors as our mental models have a tendency, in deceptive or atypical situations, to focus on the wrong things. He therefore suggests that in some instances we need to 'unlearn' (loc 3286) them, in order to entertain new ideas and beliefs that are more contextually appropriate. This supports Lum's (2009) claim that the ability to modify and adapt our schemata is an important feature of occupational capability.

5.2 Learning to feel

While the nurses learnt to perceive things in a particular way, they also began to develop an intuitive sense or feel as to whether things were going well or not in their field of practice. This use of intuition is well documented as an important feature of expertise in the professional literature (Benner, 1984; Klein, 2009; Green, 2012; Chilcote, 2017). When interviewed, many nurses said they could often pre-empt the deterioration of patients based on relatively weak signals, prior to any physiological changes. The nurses also spoke about experiencing a general sense of foreboding or unease. For some, the trigger was an unexpected or subtle change in a patient's behaviour (*jnr2, jnr3 and exp4),* for others there was an ominous and intangible feeling that they had experienced this event before *(exp1 and exp2)*. Many nurses spoke of using intuition or 'gut feelings' in their interviews, indicating that it was a common feature in nurses' discourse. This also meant I needed to exercise some caution in relation to their claims, especially when the nurses failed to offer any specific examples of when they had recognised this phenomenon themselves. However, many were able to give specific examples of being tacitly aware of something, or feeling that something was not quite right, that they were unable to articulate. This relates to Polanyi's (1966) claim that 'we can know more than we can tell' (p. 4), in that while we might be aware of certain phenomenon, we may not be able to clearly express to others how we know such things.

For example, one participant recalls looking at a patient and thinking '*your numbers are alright but you're just not right*'. This resulted in her calling the medical registrar even though their '*ABG's (arterial blood gases) and obs (observations) are holding for now*' as they had '*a feeling that something is not quite right*' *(exp1).* Nurses' actions therefore appeared to be guided by these intuitive feelings. During the observation period, many of the nurses also demonstrated signs of concern and anxiety about their patients that they could not express. This often affected how they practised, how they appeared to

ponder over certain decisions rather than others, how they paced the ward and looked distracted while they were carrying out other, more mundane and routine tasks *(exp1, jnr3 and exp5).* It also meant they did not always feel satisfied with certain advice or prescribed treatment plans for patients and would often seek further clarification before acting. Decisions about patients therefore needed to 'sit right' or 'feel right' with the nurses before they could act on them. In the following example, a nurse is concerned that something is not quite right with her patient, which gives her a sense of uneasiness or foreboding.

Example 2.1: *'so I was reading a lot of other things into it'*

'I was asked to see a patient with a below knee (amputation) and …….his wound was open and ……. I could tell his temperature was absolutely fine, his wound, yes was mucky we were putting larvae on to treat that, his clinical signs were absolutely fine and I said to the consultant 'he will become septic and if you don't take him for an above knee (amputation) I think he's going to deteriorate even more'. 'No, no he's absolutely fine', but I'm telling him you know, I can't see the wound base, I can feel it but I can't see any deeper but he's probably got osteomyelitis, he's probably going to become septic from the osteomyelitis if you don't take him for an above knee or he'll end up having a hind quarter. Not because there was any evidence on paper, not because I could prove it…but because of my experience, the fact he wasn't getting into bed at all, when he did get into bed he was continuously putting pressure on his stump, the way he was explaining things to me, the pain, and then the next minute it didn't hurt at all - no pain, as it's probably gone completely beyond the nerve endings, you know. Just because of my clinical experience so I was reading a lot of other things into it……So I came in on Monday, he'd been rushed into theatre - osteomyelitis infection, it had to be operated on over the weekend for a high above knee (amputation) and the doctor did say 'you said that' and I said 'I know, I know'. I don't know why because he didn't show any signs of it at all …and I think that is just my experience' (exp4).

In this example, the nurse is alerted to potential cues from the patient to indicate imminent clinical deterioration. On the surface, he has no clinical signs of infection and his wound is being treated in the normal way, so there are no obvious signs that he is not progressing well. However, the nurse appears alert to certain manifestations in the patient's behaviour, including his reluctance to go to bed. She is also concerned that, although previously complaining of pain, he now has no pain, which she may interpret as a sign that the tissue damage is so advanced it has now progressed beyond the nerve endings. It is possible on hindsight to say that the absence of pain was a key indicator of deterioration, yet absence of pain may also indicate that the pain medication is effective. It is therefore difficult to determine exactly what concerned the nurse, as she has only a general feeling that something is not right. This may be because the nurse is employing certain schemata in relation to how patients recover from amputation, which this patient does not fit. Or else it may be because she has come to know this patient very well and is therefore attuned to his behavioural cues.

This theme of intuition arising from a nurse's familiarity with patients was also common in the qualitative interviews. This may appear quite natural, as nurses spend a lot of time with patients in comparison with other healthcare professionals. It also concurs with the findings by Chilcote (2017) that intuition increases as a result of the growing relationship between a nurse and their patient. So when asked for triggers that alerted them to signs of patient deterioration, they often commented '*I'm with them all day' (jnr4),* which meant they were more likely to gauge what is normal for these individuals. For example, one of the nurses senses that something is not right with her patient and it later transpires that this patient is becoming septic as, '*I knew her from before, usually she would talk to you and that night she was not chatty, not mouthing words or anything and…. I felt very uncomfortable…….it was a change for her, it was very unusual' (jnr3).* In this way, nurses appeared

emotionally attuned to 'reading situations', which Benner (2000) suggests is vital for warning us of potential danger.

While the nurses were very much attuned to picking up on unusual or untoward phenomena they often found it difficult to raise these concerns to colleagues, in the absence of quantifiable data. They also noted that colleagues were more inclined to listen, if they had already established good working relationships with them (*exp1, exp2, jnr5*). This indicates that knowing others, in terms of whom to listen to, or who to trust, are important for us to enact our occupational roles. This allows us to make a considered assessment of which colleagues' concerns to prioritise over others. Therefore, to be considered capable, one must appear to others as someone who can be trusted and whose concerns can be taken seriously. Such relationships appear to form between individuals who have worked closely together over extended periods of time, as the following example demonstrates.

Example 2.2: '*he would know I knew when something's not right*'

'When I worked as a haematology nurse specialist I worked with the consultant and he would always say …as I used to do a clinic, I'd do half the patients and I'd see them on my own and if I said to him 'can you come and look at this patient?' He'd say 'I'll always come… because I'll always know you're right'. He'd say 'because you might not know what the problem is, but you would know there was a problem'. He'd know that I may not have the in-depth sort of knowledge but he would know I knew when something's not right…….Sometimes it's that gut (feeling), sometimes I've seen it with him, because obviously sometimes I'd be chaperoning or I'd be working with him…so I could say you know I saw that with that patient before, so I would know that. Some of it would be by looking at the patient and sensing that something is not quite right and checking other things, like the blood results, and I think …I remember seeing a patient, who

didn't have a malignant condition, whose haemoglobin had dropped and I said (to the patient) 'you'll need to go away and do some faecal occult bloods' and it came back that they were positive and he had some sort of carcinoma of his colon……..' (exp2).

In this example, the nurse says she has an intuitive sense when something is not right, and this is enough to alert her colleague that she has picked up on something significant. This may be because they share similar schemata and tacit understandings of what 'normal' or indeed 'abnormal' looks like. This is congruent with a phenomenological account of knowledge, where individuals are perceived as social beings, involved in shared practices and it is through such practices that they will subconsciously learn what is significant in any situation, and how to pick up on the 'right' cues. As Heidegger (1962) suggests, *Dasein* is always involved with others, or as he terms it 'being-with', in that objects and features in the world are there, not just for the individual themselves to deal with, but are also there for others to deal with. So there is a certain way of going about things, and reacting to things, which is socially defined. In this example, the nurse appears to have developed such understandings by working alongside her more experienced colleague. These tacit, background understandings also allow the nurse to interpret things in certain ways as,

> …whenever something is interpreted as something, the interpretation will be founded essentially upon fore-having, fore-sight, and fore-conception. An interpretation is never a presuppositionless apprehending of something presented to us
>
> (Heidegger, 1962, pp. 191-192).

In this situation, the nurse knows to look out for certain phenomenon and is therefore attuned to pick up on certain cues, in this case a low blood

haemoglobin, even though the patient has not been diagnosed with cancer. This indicates that intuitive judgments are often grounded in knowledge accrued from our past experience, and the recognition of certain familiar patterns, which supports the views of Easen and Wilcockson (1996). However, because this knowledge appears to arise pre-cognitively and subconsciously it can have the appearance of just being a hunch or an educated guess.

From these examples, it might be said that the nurses are emotionally predisposed to sense when something is, or is not, right. This knowledge is not a result of theoretical reasoning but appears to be something much more immediate and embodied, gained by an individual's physical and bodily engagement in practice, as described by Polanyi (1966) and Merleau-Ponty (2014). As the nurse comments, it is because *'you've seen that patient before'* or *'you've been in that situation before'* (*exp2*). This indicates that developing occupational capability is a result of being exposed to, and learning how to deal with, a certain repertoire of situations encountered in practice. In this way, we can become attuned to the feelings, intuitions and emotions that this practice engenders. These affective phenomena can also be seen as the body's automated alarm system in action that, Damasio (2006) says, alerts individuals to potential problems well in advance of more tangible and concrete evidence. These feelings can only be developed by our actual experience of having been in a similar situation before. In this way, we learn to connect a particular outcome with a particular emotional body state that 'acquires the hidden, dispositional representation of this experience-driven, noninherited, arbitrary connection' (Damasio, 2006, p. 180). This suggests that individuals may be emotionally pre-disposed to experience situations in particular ways.

5.3 Learning to do

While 'learning to see' and 'learning to feel' were important in the participants' accounts, there was also a third sense in which the nurses appeared to be learning, and this was through the actual physical activity of carrying out a task. For the nurses then, the physical act of doing something enabled them to understand the world in a particular way, which affected how they perceived tasks and related to situations. As Claxton, Lucas and Webster (2010) suggest, humans have evolved to prioritise doing over thinking and are essentially active, rather than contemplative beings. Certainly, from the accounts, the nurses' ability to do things was not seen as simply the application of theory to practical situations, but rather as a means of gaining deep situational understanding of nursing practices.

It was noted throughout the observation period that the sorts of tasks individuals were involved in affected what they saw as important in relation to these tasks. In example 3.1, one of the medics had prescribed a list of medications for an unconscious patient, which they requested the junior nurse to administer. The experienced nurse advised her junior colleague to administer the intravenous, rather than the oral, medications. Sometime later, the medic returned to the junior nurse to say that *all* the medicines needed to be given and again passed the drug chart to her. This junior nurse appeared unsure of what to do next and, once again, the more experienced nurse intervened to tell the medic that, as the patient was unconscious, it was not possible to administer oral medication. This observation was later discussed with the experienced nurse on interview.

Example 3.1: '*she can't swallow*'

'the doctor kept asking the nurse to give the oral medicines they had prescribed to the unconscious patient and she kept looking at you - so you had to intervene and say …..

'No – she can't swallow',……..(laughs) …it's almost laughable but you've got to watch the doctors because they don't actually think about what the patient can do, all they think is - the patient's got to have this, they've got to have that, they must have this, they must have that. They never think about how they're going to achieve that….so, it's kind of the nurse's job to say 'no that's not going to work, you're going to have to give it in a different way'…..' (exp1).

In this scenario, the medic has prescribed what they consider to be the most optimal medicines for the patient; however, they have not considered the physical ability of the patient to take those medicines. In this instance the nurse, whose responsibility it is to administer the medicines, has to point out to the medic that the patient is unconscious and therefore unable to swallow. This appears counterintuitive as knowing that someone who is unconscious is unable to swallow would appear obvious, so why then is the medic requesting this oral medication? This may relate to their particular involvement in the situation, the medic as the prescriber of the medicine will have an idea of what is the most appropriate medicine for that patient at that particular time. However, they are not involved in administering the drug, they may also suppose that the drugs are available in another form, or else they have not considered the administrative aspect to any significant degree. So there remains a disconnect between the medic's knowledge of what the patient requires and the nurse's concern with the practicalities of carrying out this instruction. This difference can be seen in relation to the context in which they need to use their respective knowledge of medicines, as prescribers and administrators will make different considerations of a medicine in terms of these activities; demonstrating the contextual nature of knowledge.

The nurses also related the importance of learning by physically doing something. For example, one participant said '*words go in one ear and come out the other with me. I can't retain it long enough to remember it. If I do it then and there, the next time I come to do it - I can do it. It's like yesterday… a perfect example…I've never taken out a drain before ……so I was instructed by Sister to do it and I pulled it out, so now I can do it. I need to be able to see things. When I see things as I'm doing it…it's like even now I can see it being done' (jnr2).* Similarly, in relation to administering medicines a nurse recalls learning through the actual practice of carrying out these activities. This appears to reduce the cognitive load in undertaking such tasks, so actions can become more fluid and spontaneous, '*…..I think you're just so cautious in the beginning and you're scared of anything and you like just check everything…I'm not saying I don't check now but….. a lot of the patients have been with us for quite a long time…so you get to know their medications….so you become a lot more efficient in the way you do it…….you remember what colours, what shapes, sizes, yes doses…and now I know doses, when I should be giving them, how many I should be giving, whereas in the beginning I was checking everything as you're learning yourself....' (jnr4).*

This involvement in practical activities also allows individuals to experiment and try things out, to have a go and 'get the feel' of things, as Claxton, Lucas and Webster (2010) describe. This engagement of the body, and not just the mind, develops a sense of connection with what you are doing through actual bodily contact, through physical feel and touch. Individuals will learn what things look and feel like and will develop the required physical dexterity to manipulate these objects. In this way, an individual does not perceive their environment in terms of offering a space for certain unrelated activities, but rather as one that offers opportunities for certain purposeful behaviours and actions. As Merleau-Ponty maintains, an individual

> …need not seek a situation and a space in which to deploy concrete movements, this space is itself given, it is the present world: the piece of leather 'to be cut' and the lining 'to be sewn'. The workbench, the scissors, and the pieces of leather are presented to the subject as poles of actions; they define, through their combined value, a particular situation that remains open, that calls for a certain mode of resolution, a certain labour
>
> (Merleau-Ponty, 2014, pp. 108-109).

As activities become more familiar to individuals, they will develop natural ways of dealing or coping with them, as Dreyfus and Dreyfus (1986) suggest. So drains will 'show up' for us as something that requires removing and medicines as something that requires dispensing. Therefore, we can become attuned to dealing with these objects and artefacts as part of our everyday unconscious coping within our environment, which Heidegger terms as a 'readiness-to-hand', or Claxton, Lucas and Webster (2010) as 'unconscious competence'. This may also relate to what Merleau-Ponty (2014) describes as motor intentionality, or the ability to get about and physically deal with the world that is brought about by opportunities for action, rather than opportunities for thought.

There was also evidence to suggest that when individuals undertake certain tasks, they will be making all sorts of considerations in relation to that activity, rather than just carrying it out in a mechanistic way. This is illustrated in example 3.2 where the nurse is taking an arterial blood gas sample.

Example 3.2: '*you get a sense of what you're doing*'

'*it's about the feel, it's a feeling process it's not about seeing, it's about feeling taking an arterial sample…..feeling for a good steady pulse is it thin or is it thready? If you've got a big bounding pulse you know the carbon dioxide level is going to be up, if its thin and thready then they might be under-filled and you*

might have trouble getting it, if they're a bit cold or they've got peripheral vascular disease ……you get a sense of what you're doing. Often when we've done blood gases on patients, where we've used a slightly different technique, for example they might need a blue needle or you're going in at a funny angle then a lot of our patients will tell us how to do it as they've had years of it' (exp5).

In this example, the nurse is reading more into the process of taking a sample of arterial blood than simply outlining the specific techniques she will use. The nurse is almost anticipating how difficult it might be to get the blood, in feeling for a '*bounding*' or '*thin and thready*' pulse and what this might mean in terms of being '*underfilled*'. She is also considering what the blood results may show i.e. '*the carbon dioxide level is going to be up*'. The nurse also recognises that she may need to modify her technique to take the blood by going in at '*a funny angle*', so these skills cannot be reproduced identically in every situation, as Ingold (2000) says, but rather require adjusting to suit each patient. Brekhus (1998) suggests that such skills are often portrayed as 'everyday, practical, routine and mundane practices' (p. 36) and might cause us to overlook, what Shakespeare (2003) sees as, the expertise and embodied cognition required to perform them well. So such skills, developed by habit, should not be considered as merely mechanical phenomenon but rather involve high levels of cognition.

There is another important example that illustrates an individual's physical engagement in practice, this is where an individual's use of an object becomes so intimate that it almost becomes an extension of that individual's physical being, as example 3.3 demonstrates.

Example 3.3: '*the swab picks that up*'

'The appendectomy wound was very odorous and grey so probably indicating that there's dead tissue inside and as there was a fine line incision I couldn't see if there was this tissue, so by using the swab I was doing two things. I was feeling the depth of the wound and also at the same time I was able to take a culture swab of the wound.'

How can you feel the depth of the wound with the swab?

Depending on where the wound is or what the size, I can probe to see if there is any tract or any sinus coming off and check the wound bed or feel a corner, then I know that's the wound's depth. You get little sinuses that come off and you can track deeper…and if I can get deeper and if there is a sinus, there are certain dressings I cannot use. So I wouldn't use negative pressure as I don't know what I'm sucking on and actually that lady's quite thin, that could have been sucking on bowel or intestine or we wouldn't know what we were doing with that……..You're feeling depth to make sure you're feeling the wound bed and I'm feeling tissue and actually I'm feeling soft tissue and that's usually where I find the sinus, so I'm feeling for depth and pressure through the whole wound……sometimes I have to put a little bit of pressure which may cause a bit of pain. I have to look at the way the suture line is and if there's lots of exudate or lots of ooze and pus coming out, then there's probably an infected area in the wound bed.

And you can sense all that just through that swab?

Yes, the swab picks that up' (exp4).

In this example, the nurse is able to identify the structure of the wound by using the probe to investigate it through its narrow opening along the suture line. The nurse is sensitive to what information she can pick up from the end of the swab, in terms of feeling for depth or tissue type. The nurse is aware of what

'*feeling soft tissue*' actually feels like, a knowledge acquired tacitly through repeated practice. It is almost as if the nurse's thinking is focused on the tip of the swab as she probes the wound. The swab has become an extension of her fingers, acting as a medium in which to explore certain aspects of her environment that she is physically unable to reach. It therefore extends her tactile perception and the probe is no longer an object, distinct and separate from the body, but has rather been absorbed into the body's corporal schemata. It becomes a means through which she can perceive and engage with the world, acting less like an object but rather as an extension of her, as though it were an integral body part.

In this sense, the swab can be considered as analogous to Polanyi's description of the probe, as he describes,

> …as we learn to use a probe, or to use a stick for feeling our way, our awareness of its impact on our hand is transformed into a sense of its point touching the objects we are exploring. This is how an interpretative effort transposes meaningless feelings into meaningful ones, and places these at some distance from the original feeling. We become aware of the feelings in our hand in terms of their meaning located at the tip of the probe or stick to which we are attending. This is so also when we use a tool. We are attending to the meaning of its impact on our hands in terms of its effect on the things to which we are applying it
>
> (Polanyi, 1966, pp. 12-13).

So it is through such physical engagement in tasks that we are able to develop occupational capability as, by undertaking them, we can come to see or understand our 'world' in a particular way. Therefore, a physical activity, such as the ability to manipulate a swab, becomes a mental activity in being able to differentiate the tissue type that the tip of the swab is encountering. This enables individuals to develop a kind of motor intentionality to deal with their

immediate environment. This suggests that 'a skill is finally and fully learned when something that was extrinsic, grasped only through explicit rules or examples, now become to pervade my own corporeality' (Leder, 1990, p. 31). This illustrates the embodied nature of cognition in that what is outside of the head is not necessarily outside of the mind and instead has become 'incorporated bodily know-how' (Crossley, 2001, p. 123).

If we return to the research questions, there is evidence to suggest that nurses were perceiving and interpreting situations in ways that can be understood by a phenomenological account of knowledge. The nurses appeared to have constructed ways of seeing and interpreting their environment, as a result of a certain mental preparedness or schemata. This meant the nurses never attended to situations from a neutral perspective, or 'schemata-less' (Lum, 2009), but were very much primed or ready to see the world in a particular way. They therefore had a 'readiness', as Searle (1995) suggests, to see and recognise certain phenomenon, but not others. For example, cardiovascular deterioration in patients, but not necessarily neurological deterioration, or a 'readiness' to recognise treatment regimes prescribed on drug charts, or even a 'readiness' to attend to equipment in relation to the activities in which they are used. Not only did these nurses appear to be employing schemata, but there was also evidence to suggest the nurses were modifying and adapting their schemata in relation to feedback from their environment. For example, learning '*abnormal is normal*' for some patients or in recognising the non-overt signs of meningitis.

In a similar way, the nurses appeared to have developed an intuitive sense of when things were not quite right with their patients. These feelings were often borne out by having been in a similar situation before. This indicated that nurses had learnt to 'associate certain events with particular body states' (Lum, 2009, p. 129), which meant that they were predisposed to associate certain phenomenon with certain emotions. Nurses also learnt through their

physical participation in practice and appeared to demonstrate a sense of embodied cognition, in being emotionally and physically connected with these practices. They also appeared to be developing new knowledge and understandings, by undertaking such practices, that enabled them to deal or cope better with situations commonly encountered in practice, in a manner that Dreyfus (1991) may refer to as 'absorbed coping'. In this way, occupational capability appeared to be more concerned with finding a way around in the 'world of practice', a world constituted by an integrated network of meanings and understandings.

Chapter Six – Learning the right things to do

The nurses appeared to be aware, in their espoused accounts, that there was an agreed normative way of going about things, both in terms of what one should know as well as how one should act. They also appeared concerned with possessing the most appropriate information and facts pertinent to their practice, in the form of rules, guides and protocols. From this perspective, it could be said that the nurses were concerned primarily with prescriptive or regulative rules. However, the practice of these nurses appeared much more spontaneous than the following of such rules may predict, which this chapter will try to explore. It will begin by illustrating how the nurses appeared to assume that knowledge had a very definite and unambiguous nature, where frequent reference was made to having the 'right kind of knowledge' or using 'the right kind of tools' or the 'best sort of evidence'. It will also draw out the sense of disconnect between what the nurses saw as the 'right' or correct form of knowledge to inform their practice, and the kind of knowledge they actually drew upon. This meant the practice of these nurses appeared far more explorative and investigative than their official accounts often acknowledged.

6.1 Having the 'right' kind of knowledge

The nurses were all aware of the 'right' type of knowledge to possess, the kind that carries the most kudos in the organisation, and this tended to be knowledge of a scientific nature. This is probably due to the emphasis placed on biomedical knowledge and EBP within healthcare. This often meant knowledge manifested in other ways, such as in the ability to communicate with patients, may not be considered as equally valuable. During the observation period, one of the nurses was able to establish rapport with frail and elderly patients, which was at some remove from the practice of her clinical colleagues. I discussed this with her later on interview, where it became apparent that she did not think she had demonstrated any particular expertise in these situations.

Example 4.1: '*I don't have anything special knowledge-wise*'

'I suppose one of my personal issues and it has always been for me the reason why I have a fear of public speaking as well as teaching, is for some reason I just assume that everyone knows what I know and that I don't particularly have any special…..knowledge. I don't have anything special knowledge-wise and I don't know anything that is particularly academic or 'rocket-sciencey'. I have experience and I just assume people have the same and they don't, they don't. I walk onto a ward and I think they must have thought about this… for this patient, they must have done this and they must have done that and I don't really need to question them as……. it's stating the obvious as it's just general knowledge…' (exp3).

The knowledge that the nurse is referring to as '*academic*' or '*rocket-sciencey*' can be interpreted as consisting of facts, rules, protocols and guidelines; in this case medical facts. This is the kind of domain-specific knowledge that Eraut (2005) says is common in many accounts of expertise that associate capability with a kind of 'cognitive competence' (Hakkarainen *et al.*, 2004, p. 19). As a result, this nurse feels much of the knowledge she has acquired is not considered legitimate knowledge, or even knowledge at all. Therefore, her ability to effectively communicate with patients is just a normal, everyday activity, or simply '*general knowledge'*. The lack of appreciation of such abilities may be due to the way one acquires them, as they may accrue gradually and incrementally over time through our everyday engagement with patients. Individuals may also assume, because these abilities appear so natural to them, that they are innate. For instance, it may be assumed that this nurse is just naturally kind and good with patients; however, such assumptions undoubtedly belie the time and attention required to develop such capabilities.

Part of the difficulty in recognising such abilities is that we are often unaware that we have learnt anything new, as there is a tendency to assume that we have always known something, or that we have always been able to do something. Kahneman (2012) refers to this as 'hindsight bias', which is a limitation of the mind and its 'imperfect ability to reconstruct past states of knowledge, or beliefs that have changed' (p. 202). This may mean that only certain aspects of knowledge stand out as important, and this may be knowledge acquired in a conscious and deliberative way as, it is often assumed, 'comprehension is prior to competence' (Claxton, Lucas and Webster, 2010, p. 10). However, Heideggger (1962) claims that knowledge of this kind is at the furthest remove from us, whereas our everyday being, or coping in the world, is something far more intimate. Heidegger maintains this is because understanding is more fundamental than knowing, as it is the pre-requisite of knowing, theorising or explaining. In this sense,

> …Being-in-the-world is essentially non-cognitive, it is not primarily about what beliefs or knowledge we have. Knowing is just one specialised kind of Being-in-the-world that is derivative of a more basic, non-cognitive kind of 'dwelling'
>
> (Lum, 2003, p. 10).

So from this perspective, acquiring facts requires us to 'objectify' and pull back from our natural way of Being-in-the-world and is therefore a more abnormal or abstracted way of being. Perhaps this is why we are more consciously aware of acquiring knowledge in this way.

While the nurses were concerned with having the right kind of knowledge, they were also concerned with using the right kind of formal tools.

However, many nurses were observed accessing 'unofficial' tools to support their practice. These were often tools that were immediately accessible to them within the clinical environment, or tools that they were familiar with using in their lives outside of work. For example, mobile phones were used to contact each other when nurses were working at disparate parts of the hospital (*exp1 and exp4*), others used the phones to set alarms to remind them to administer medications that were very time specific e.g. Parkinson's medication (*jnr2*). The nurses appeared to have adopted these unofficial tools to improve their efficiency within their working environment, using them in novel and creative ways, as the following example demonstrates.

Example 4.2: *'Wikipedia's not like a reliable source'*

'I noticed you used your mobile phone on occasions to contact your colleague….'

Yes because if there's two of us on we only carry one bleep so we keep in contact by our mobile phones and text messages normally, we don't get them out in front of the patients, or we try not to, so that we can just keep that contact there. But not all wards have internet access either, so if there's something that I'm unsure of I suspect I quite often Google it.

You were using Wikipedia…..

Yes Wikipedia's not like a reliable source as such but sometimes it's just another person's opinion, so it's good enough to give you the prompts that you need. You can't always access the official websites and papers etc…..which is crazy to me' (exp1).

In this example, the nurse exercises some caution in saying how she uses these tools. She is keen to point out that her team never use the phones in front of the patients, thereby implying they are not for legitimate use. She is similarly

a little embarrassed about using Wikipedia, rather than any official website to access information. In this particular example, the nurse was speculating as to what may be wrong with the patient and checked the online resource to remind her what the common liver enzymes were. During the observation period, this appeared a highly practical means of rapidly accessing data in the midst of a busy clinical environment. It is clear though that this nurse believes she has broken some kind of prescriptive or regulative rule that antecedently regulates existing activities (Searle, 1995). In this instance, a rule informing us of the correct way to contact colleagues, or a rule about the right kind of information to access prior to making decisions, using what Moule and Hek (2011) refer to as, 'referenced facts and high-quality evidence' (p. 20). In this example, the nurse says she exercises caution in using such informal resources and treats this information like '*it's just another person's opinion'.* This highlights the discretion many practitioners apply to any source of information, prior to acting on it. Nonetheless, it does conflict with the ethos of high quality peer-reviewed knowledge presented by the official discourse of EBP.

This demonstrates the challenge of accessing information and support within the time and resource constraints of clinical practice, where expediency is often privileged over any other concern. In this environment, decisions need to be made under the conditions of 'time-pressure, uncertainty and ill-defined goals' (Ross, Shafer and Klein, 2006, p. 403). It was also evident that the nurses felt some information sources were more legitimate than others and common in their espoused accounts, was a sense that the majority of their practice was evidence-based. This indicates that Holmes *et al.* (2006) are correct in surmising that adherence to EBP guidelines is seen by many practitioners, as the only legitimate means to provide optimal care for patients. During the interviews, it was evident that many nurses were concerned with following these formal rules, as example 4.3 demonstrates.

Example 4.3: *'I would have got into trouble'*

'…I had to send a stool sample and the nurse was saying 'you need to send it, you need to send it' but you cannot send it if the patient has been in for a few days. So I told her I'm not sending it……and if you want to send it then you send it…I'm not sending it I'm not getting into trouble. If I had listened to her and sent it then I would have got into trouble.

Is it because they have to be sent within three days?

Yes yes…..And you cannot send it otherwise….unless the doctor says we needed it….so I didn't send it and she was adamant that I should have sent it - so knowing how to balance it out I had to listen to what other people were saying too.

Why did she want to send it, what was her reason?

She thought it was really infected…..I knew it was really offensive but I didn't feel confident sending it, and I would have had to answer to the manager but if I had gone by her, at the same time, just gone by what she was saying then I would have got into trouble with that' (jnr3).

In this situation, the nurse is reluctant to send a specimen because, according to the official guidance, it should only be sent within the first three days of a patient's admission. However, her colleague says the specimen indicates that the patient has an infection that warrants further investigation. While this junior nurse agrees with her, she is reluctant to send it in case she '*got into trouble'*. In this example, the nurse is not able to use her own clinical judgment and her action is guided by what the protocol says. The nurse is therefore adopting rule-following behaviour, in a way that Dreyfus and Dreyfus (1986) say is typical of novice practitioners. Perhaps it is only later, after gaining

experience that one feels able to deviate from such guidance. This may also be an example of defensive practice, as the nurse's motivation to act is to prevent herself getting into trouble by not deviating from the protocol. Such rule-following behaviour can also be seen as a way in which practitioners have learnt to deal with uncertainty in clinical situations as,

> …many of the problems in current practice seem to arise from the defensive ways in which professionals are expected to manage that uncertainty. For some, following rules and being compliant can appear less risky than carrying the personal responsibility for exercising judgement
>
> (Munro, 2010, p.6).

The junior nurses also appeared confident that such rules and protocols are available to guide most situations in practice, as example 4.4 demonstrates.

Example 4.4: *'in most situations we've got policies'*

'So you say a lot of the care you give is evidence-based?

Oh yes definitely…..as there are things that are improved especially after your first signs of seeing something, you can't just rely on your observations can you?

So what evidence are you relying on in most situations?

In most situations we've got policies it's all there on the intranet, sometimes we don't realise that there's a lot of stuff there. If you're not sure the policy is always there to tell you how to go about it and that is the type of evidence you are looking for. Other than that, I feel that most things that I learnt in Uni (University), I can see them coming through now and things I didn't even understand then, now I can see them coming through. I'm applying the evidence to it now. You try and put two things together but you can't really as you haven't

worked in the field before, you are just going by reading it, but now I am applying the evidence' (jnr3).

In this example, the nurse refers to policies being available on the intranet. However, during the observation period, she rarely referred to any policy or guideline in times of uncertainty, but rather discussed these issues with her clinical colleagues. Yet the nurse appears reassured, in her espoused account, that policies can be used in '*most situations*'. In certain situations, they will undoubtedly prove an invaluable resource, for example, during this observation period, the nurse was able to manage a patient's diabetic treatment regime by following a protocol. Such protocols or prescriptive rules, Eraut (1994) suggests, are useful in guiding practice in known or anticipated situations. Nevertheless, they are rather static in nature and not sensitive enough to gauge the way in which situations emerge in practice. Therefore, they have a relatively narrow remit of influence on professional practice and, as Benner (1984) and Dreyfus and Dreyfus (1986) maintain, professionals need to work far beyond such rules.

In fact, during this observation period, the nurse was trying to make the most effective use of her time in managing her client group. This involved ensuring all the morning medicines were administered, during which time, two patients became acutely unwell and the relatives of a third, who was terminally ill, were requesting to speak to her. In such instances, there are no formal rules available to inform her how to go about doing this. So in this situation, the nurse was *not* concerned with a logical process of collecting the 'right cues' for 'the right patient' to take the 'right action', as Levett-Jones *et al.* (2010) suggest. Instead, several events were occurring simultaneously that all required immediate attention. The nurse appeared to manage this by practically dealing with each situation as it evolved, drawing on the best knowledge and experience she had to hand. This involved speaking to the relatives, at times interrupting

the medicine round to attend to other patients, as well as calling on her nursing and medical colleagues to assist her.

This scenario supports Schön's (1991) claim that professionals are not always involved in straightforward technical problems, whose outcomes are fixed. Instead, he suggests, that in order to manage such situations there needs to be an active dialogue between the practitioner and the situation, which allows the situation to be reconsidered in light of any new information. In this example, the nurse can be seen as 'reflecting-in-action' (Schön, 1991), in that she is continually assessing and reassessing the situation that she is physically and emotionally engaged with. In this way, the nurse is essentially learning through practical engagement in the activity. This concurs with the claim that,

> …human understanding was a skill akin to knowing how to find one's way about in the world, rather than knowing a lot of facts and rules for relating them. Our basic understanding was thus a *knowing how* rather than a *knowing that* (original italics)
>
> (Dreyfus and Dreyfus, 1986, p. 4).

In examples 4.1 to 4.4, it was apparent that the nurses had a sense of the right way to go about things in practice, which was often expressed in terms of prescriptive or regulative rule-following behaviour. Yet the nurses appeared to have developed capabilities that they were not consciously aware of, such as the ability to communicate effectively with elderly patients, or to be creative and resourceful in the face of limited time and heavy workloads. This supports the view that not all aspects of occupational capability can be reduced to regulative rules (Lum, 2009). Instead it suggests that the way individuals perceive and relate to practice is based on a more fundamental, or primordial, understanding of how the world works, in relation to that occupational group. Perhaps it is only

when errors occur that nurses are consciously aware of how they have perceived and interpreted situations, which the next section will explore.

6.2 Learning from errors

It is often only when individuals have made errors that we can begin to unravel the presuppositions that have guided their actions. In the following examples, all the nurses appeared to know things in the propositional sense, in that they were aware of certain facts or certain protocols to follow, yet inadvertently detracted from these protocols.

Example 5.1: *'I knew that...I still did it'*

'I remember standing someone with heart failure and I knew, the funny thing was, this was in ED (emergency department) and I was on my elective placement actually and he asked me for the commode and I was like 'yes yes that's fine' and I went to get it, and I'd only just had a placement on a cardiac ward which really made me up-to-date, and I stood him and then he said about needing to stretch his legs and I walked with him to the shop and back again, and one of the nurses said to me 'where have you been with him?' and I said 'to the shop' and he said 'we're not supposed to move them for twenty-four hours according to the ACS (acute coronary syndrome) protocol', and I knew that. I still did it…I was like…oh……and I was like why did I do that? That was silly – I did know that. Probably because he was quite independent, he wasn't showing any signs of having had a cardiac event ….he wasn't having chest pain or that…' (jnr1).

In this example, the nurse recognises that the patient has heart failure and she says she is familiar with the protocol for the care and management of patients with this condition, so there is no gap in her knowledge in a propositional sense. Nonetheless, the nurse is presented with conflicting

information, she recognises that this patient has had an acute coronary event, but she also acknowledges that he appears fit and well. Therefore, her motivation to act is to accommodate him in his desire to go for a walk. So failure to take appropriate action cannot be blamed on her not having the correct facts or information. It could be assumed that she has momentarily forgotten that he is a cardiac patient, however it is more likely that the patient does not present or 'show up' for her as one, as he appears too well. This might also relate to her particular schemata of what 'cardiac' patients typically look like.

In example 5.2 a nurse, although aware of certain facts, acts in a way that is not congruent with them.

Example 5.2: '*there was no thought process*'

'Sometimes you just have a blank moment…..I had to get a toilet deep-cleaned the other day. I'd only been working as a newly qualified for a while.……and a patient came in and they'd had sickness and diarrhoea the day before but they'd been on antibiotics so I put them on pathway B (indicating they are potentially infectious). I told the Band 7 we'd need a side-room. This patient had already been accepted by the medical team and following all the right protocols and never had any episodes of sickness since she'd been in. She said she wanted to go to the toilet so I said 'I'll get the commode' and she said she didn't really want to use that with everybody around her so I said 'do you think you'll be able to walk?' and I took her to the toilet. And the nurses were like 'where's bed 12?' and I said 'she's gone to the toilet' and she said 'she's pathway B!' and I thought 'oh no!' I don't think she was contagious but that's not the point I didn't think about that at the time. There was no thought process' (jnr1).

In this second example, the nurse recognises that the patient is potentially infectious and proceeds to request a side room for them, in accordance with the official guidelines. However, she still offers to walk the patient to the toilet that is used by other patients and, in doing so, may be potentially spreading the infection. The nurse sees this as a '*blank moment*' as her instinct, when the patient requests the toilet facilities, is to ensure she can use then in a private and dignified manner. So again, the idea of knowing something in the form of facts does not ensure that one will act in a predictable way in accordance with this information, especially if one is presented with conflicting ways of acting. This demonstrates the limitations of knowing in a propositional or theoretical sense, as removed from any context; it can have very little influence on our actions. This supports the claims made by Paley (2007) that not all errors in practice can be accounted for in terms of a lack of information.

In the next example, a nurse recalls a time when she mistook a normal syringe from an insulin syringe that could have resulted in an insulin overdose.

Example 5.3: *'I could have killed someone'*

'Can you think of things you might have misjudged or done something that you have learnt from?

Definitely in the beginning I drew up, I was about to give insulin and it was like, say it was 70 units but I drew up 0.7 in a 1ml syringe, so as I went to (colleague's name) to say 'can you check this?' she went 'Oh No …!' like that. 'Why are you going like that?' I asked. 'No, no, no, you need to use a unit syringe and not a ml syringe and I said 'they're both the same'. 'No!' and she sat me down and went through everything and I was like 'oh' (gasps). I can see where … that could have been …..critical. I could have killed someone and when you make mistakes like that you never do them again…..you learn so much from doing them.

Had anyone actually told you the difference between an insulin syringe and a normal ml syringe?

They had but I'd forgotten…and what it was I was taught but if I'd practised it after, but I didn't and so I didn't remember it……until you've done it and then you've got a picture in your head, I'm not sure if your mind retains more pictures than writing…you know what I mean…?' (jnr4).

In this example, the nurse explains how she drew up insulin in a normal ml syringe, rather than an insulin one. Fortunately, her colleague spots this error when she goes to check it with her and, in doing so, avoids a clinical incident. Yet when questioned, the nurse remembers being told that insulin has its own syringe. However, whilst knowing there was a separate syringe for insulin this information could not be retrieved, as it did not appear relevant to her current situation. This knowledge remained inert, existing as a fact unconnected with a practical situation. Therefore the importance of actual practice, of seeing the syringe and physically drawing the insulin up, can create a salient image '*in your mind*' that can inform your actions in any future situation.

In all of these examples, even though the nurses were aware of the correct facts or the correct protocols they did not act according to this information. This outlines the limitations of prescriptive or regulative rules in informing our actions. It also casts doubt on 'empiricist notions of expertise' that privilege 'fact and scientific reasoning' (Hutchinson *et al.*, 2016, p. 291). For instance, in the situation with the cardiac patient, the nurse is required to 'apply' their propositional knowledge to the situation in hand, or to 'recognise a particular case as an example of a general principle' (Kennedy, 1987, p. 139). The nurse has limited success in doing this and other concerns appear to overrule her initial judgement, and this might relate to how the nurse perceives the situation. It could also be assumed that these nurses have not developed

appropriate schemata yet, in relation to caring for cardiac or infected patients, or in administering insulin injections, possibly due to a general lack of experience in dealing with these patients, or these situations. This means that in order for facts or knowledge, in a propositional sense, to inform our practice they must be incorporated into our schemata of how we see and deal with these situations.

In the next example 5.4, a nurse recalls being concerned that a patient has returned to the ward without his heparin infusion even though she 'knows' the reason for this, again indicating that we do not relate to situations in a conscious and deliberative way.

Example 5.4: '*it didn't click*'

'……the funny thing was when he came back ……. came back from theatres……. we were being stupid and said 'I wonder if he still needs the heparin?' I phoned the on call (medic) and he said 'No – not now he's has his leg off!' .....and we said 'oh yes of course!'……It didn't click, having the heparin because he had his leg and now he's had his leg off - he's not going to need it…..it just didn't click. He went with heparin he hasn't come back with heparin… ……I knew what the heparin was for I just didn't…I don't know……it was the end of the day ……. And yes when he went to theatre there was definitely something else there……but it was so funny….' (jnr5).

In this example, the nurse is aware that the heparin infusion was there to reduce the coagulability of the patient's blood but there is still a disconnect between this information and the situation that is presented to her. The nurse is relating to the heparin infusion, not in a detached or contemplative way, but rather in relation to an 'equipmental whole' (Dreyfus, 1991). In this sense Heidegger says,

> …Equipment – in accordance with its equipmentality – always is in terms of its belonging to other equipment: inkstand, pen, ink, paper, blotting pad, table, lamp, furniture, windows, doors, room
>
> (Heidegger, 1962, p. 97).

In this situation, the heparin infusion creates associations in this nurse's mind with this particular patient, in terms of infusion rates, therapeutic ranges, blood results, infusion charts etc. Such associations are important for the nurse, as she is required to monitor this infusion. Therefore, consideration of this patient, in relation to their infusion, may be an important part of her schemata that informs her how to care for them. So once the patient returns to the ward post-operatively without the infusion it appears as an anomaly to her, perhaps in light of her current schemata. This is not just a momentary confusion and lasts long enough for her to bring her concerns to the attention of the medic. This demonstrates that knowing how to care for the patient is not just a conscious, cognitive one, but rather involves a kind of subconscious knowing in relation to the sort of activities that one is engaged in. Once clarified by the medic that the infusion is no longer required, as the patient has had their leg amputated, the nurse laughs at her own apparent foolishness. However, it is important to acknowledge how such associations may be part of our natural way of going about in the world and it is only on certain occasions, where they appear bizarre and out of place, that we are consciously aware of them. Heidegger (1962) may term this as a breakdown in assignments, in that the normal way we have of going about and dealing with objects in our environment, is essentially pre-cognitive. Nonetheless, this state alters when we encounter a problem and are forced from a state of absorbed coping, to one of conscious deliberation to deal with it (Dreyfus, 1991).

In this way, the nurses appear to be acting by, what Merleau-Ponty (2014) terms as, motor intentionality, prompted by opportunities for action

rather than opportunities for thought. This is a kind of intentionality that is not mediated through conscious awareness or mental representations. In the case of the cardiac patient, the nurse is motivated to act by consideration of what she would normally do for a reasonably healthy individual. Similarly, in the case of the nurse with the insulin syringe, the medicine is automatically drawn up in the typical, or normal, syringe that the nurse has used several times before with other medicines. Likewise, in the example with the heparin infusion, the nurse is alerted that a change has occurred in the way she now needs to care for this patient, which temporarily confuses her. This indicates that we do not just relate to facts, rules or specific pieces of equipment in isolation from other considerations; but rather see them in relation to the contexts in which we are involved with them. As Heidegger notes,

> …that with which our everyday dealings proximally dwell is not the tools themselves. On the contrary, that with which we concern ourselves primarily is the work – that which is to be produced at the time
>
> (Heidegger, 1962, p. 99).

6.3 Learning to 'play' with knowledge

From a phenomenological perspective, occupational capability is not concerned with adherence to explicit rules or guides, but rather involves the development of ways of coping or acting in practical situations. This means that nurses need to be constantly reassessing situations, and making adjustments in response to the fluctuating conditions of practice; a flexibility prescriptive rule-following behaviour cannot accommodate. Throughout the observation period, it appeared that the nurses were 'playing' with knowledge by testing out ideas, through a kind of experimentation, as described by Claxton, Lucas and Webster (2010). The term play is often associated with an incidental, frivolous pursuit that nurses may not want to associate themselves with. However, in practice they were often putting forward tentative proposals, physically exploring, and

readjusting their behaviours, according to the changing circumstances of their immediate environment. Therefore, there was nothing completely explicit, definite and tangible about their practice, as all the nurses were required to learn to 'act in the moment' and 'on their feet'; qualities that many have associated with expert performance (Benner, 1984; Dreyfus and Dreyfus, 1986; Schön, 1991).

In example 6.1, the nurse is discussing the care of a patient with a chronic respiratory condition using non-invasive ventilation. She talks about this practice in relation to the official guidance, which she maintains is '*all gold standard*' because it is from the '*British Thoracic Society so it is all chest-related, so it's all NICE guidance' (exp5).* In this way, the nurse is able to give an account of her practice in terms of this guidance, indicating her practice is evidence-based.

However, during the observation period it appeared that caring for this patient was far more complicated and involved than the official guidance gave credence to, and that this nurse was drawing on other knowledge to inform her actions.

Example 6.1: '*you've got to push the patient harder*'

'How did you learn to adjust the ventilation with the arterial blood gas results?

It was all in my training I was taught ……from my healthcare background……. I knew about blood gases and we were always taught that non-invasive ventilation was about ventilating patients and you could titrate that with the blood gases…

O.K.

So if you've got a blood gas and the patient needs ventilation you start by…you would try and get up to your maximum point, or what you think is your maximum

pressure, within the first hour or whatever pressure you think the patient can tolerate depending on their cardiovascular status. When you get to that point you do another blood gas and you work out whether what you're doing is effective or not. So if you do that blood gas and if it's not effective you've got to push the patient harder. If you get to that point and it is effective you continue at the same rate, then you carry on….' (exp5).

The nurse is trying to outline the importance of her official training in informing her how to care for patients receiving non-invasive ventilation. Nevertheless, there is a huge amount of vagueness in the terms she uses to describe her practice. For example, she talks about '*what you think is your maximum pressure*', or '*whatever you think the patient can tolerate*', as well as knowing when to '*push a patient*'. While there may be clear parameters for setting up, using and monitoring a patient while on the ventilation machine, there is clearly a lot of tacit knowledge involved in actually deciding what is a *maximum pressure* or whether you have indeed *pushed* a patient hard enough. Therefore, knowing when one has pushed a patient far enough is not something that one can look up or check against any specific guide or protocol, and the practice of this nurse appears to exceed such rule-following behaviour, as anticipated by Benner (1984).

It may also be assumed that the nurse is drawing on intuitive or tacit knowledge to inform her practice. Eraut (2004) suggests that intuitive judgements are only made in times of rapid action, or crowded contexts, when an individual lacks the time and space for more formal means. However, in this example, acting intuitively appears to be the most optimal way of operating for this nurse. This allows her to consider many variables at one time, such as the patient, their cardiovascular status, the physiological observations, the ventilation rate etc. This may result from confidence gained from making similar intuitive judgements in the past, as suggested by King and Macleod Clark (2002).

Or else, such intuitive judgements may be made in relation to a whole complex network of meanings and understandings that constitute the 'world', as proposed by the phenomenological philosophers Heidegger (1962) and Merleau-Ponty (2014). The interview continues.

'So aside from setting the parameters do you ever get a sense from the patient about how they're actually doing?

Yes …yes all the time. I can see the patient's blood pressure drop due to the increase in pressure, so if you can't push them with a pressure then what we would often do is hyperventilate them……..so you may have to go down that route….and use more breaths per minute rather than concentrate on the volume …so it's working out what the patient can tolerate. Some patients are under-filled so O.K….you give them fluids so you can push them on a bit more.

So under-filled means lacking fluid?

Yes intravascular volume….because what we find with non-invasive ventilation is by using the tight fitting mask it increases the intrathoracic pressure and reduces venous return so if you've got an under-filled patient to start with they just drop their blood pressure quickly. So there are set parameters to guide you before you start, the patient has to be in type II respiratory failure before you start, they have to be cardiovascularly stable, they can't have any arrhythmia or any other contraindications so you will have already ruled that out before you start……

So would you be thinking about the patient and all the body systems….like the blood pressure…?

Yes. I think about the renal function, I think about what's going to happen to the liver as you're reducing venous return as if they're already septic they'll become more septic. If they lose their blood pressure and the fluid doesn't work…what can we do then? As we're not allowed to give peripheral inotropes so then we would call in the outreach (critical care) team to give a peripheral inotrope if we

thought the patient was adequately filled first……You just do it automatically…you're thinking of the patient the whole time even if you're not looking at them, you actually are looking at them, and you're looking at the monitor doing 15 minutes observations and when you first put them on…you might do their blood pressure every two or three minutes and monitor them closely…..' (exp5).

The nurse is not just concerned with the set parameters on the machine, but is considering many other factors as they care for this patient. There is also a sense that the nurse is visualising what might be occurring with this patient and is constructing particular schemata, or mental models, in relation to this situation, in a way suggested by Abercrombie (1989) and Klein (2009). This allows her to become involved in a kind of 'on-the-spot' experimentation (Schön, 1991, p. 63) that allows her to 'test' out certain ideas or certain scenarios. For example, anticipating whether she needs to decrease the pressure but increase the ventilation rate, or whether she can increase their circulating volume by estimating how '*under-filled*' they are. She is also pre-empting knock on effects on other bodily organs from the ventilation machine that need to be taken into consideration, such as its effect on their cardiovascular and renal system. She is also taking into consideration her immediate environment, including an awareness of what she is physically able to do herself, but also what she is unable to do in this situation, such as give peripheral inotropes. Therefore, her awareness of what she is currently doing is set against a background of these understandings that all provide context to her actions.

However, not all her colleagues appear capable of performing in this way due to their inexperience, as the nurse relates,

'… we've got a couple of new girls in our service and they'll say to us how do you know you've pushed them enough? We don't. We think we've pushed them enough but nothing's going to tell us that until we get the blood gas……and then we might need to push them more. They might have a tidal volume of 600mls but they obviously need more because the blood gas tells us we need more.

So do you think you're playing with the knowledge in a way and others might want more direct prescriptive guidelines instead?

Yes because the girls on the ward, we're training them to use the machine, and we've given them this task and they get to this target and they turn around and say that's it 'job done!'….but it's not, as the blood gas is saying we need to push them more…so you've got to think the next step….or part think the next step….and who do you call to make that next step for you….?' (exp5).

This example demonstrates that the less experienced nurses, when using these devices, do not have an understanding of when they have '*pushed the patient*' far enough. Instead, the concern for these nurses is to deliver the therapy against a set prescription but there is no sense that they can tailor this therapy to the individual patient's needs. This is the knowledge the experienced nurse possesses, where things stand out or reveal themselves in a very particular way, possibly due to her experience in playing with and adjusting these ventilation rates several times before, with other patients. So there is an all-round sense of what looks and feels right relative to the situation. In this way the nurse can be said to have developed an ability to recognise what is salient in these situations, which Benner (1984), Dreyfus and Dreyfus (1986) and Eraut (1994) all acknowledge as an important feature of occupational capability. This also means that the nurse can anticipate how effective the treatment is for the patient in advance of any blood results, as the nurse goes on to say,

'you're looking at their colour have they got a blue nose, blue lips, pale skin? We do a lot of that. When you change the settings on these machines you haven't always got the luxury of a blood gas all the time and having had a blood gas done (to me) myself - it is a very painful procedure and it's very risky. So a lot of what we do is about the observations, the patient and the monitor to work out if you're going in the right direction and we try to teach the juniors that you're looking for the patients settling in, you know the respiratory rate is coming down, that they become less tachycardic, less hypotensive the patient looks comfortable with the ventilation, so a lot of it is by looking…

So do you often anticipate what the blood gas will be prior to you taking it……?

Yes. O.K. I'm going to do this gas, this invasive procedure, I think it's the right time to do it, if it's not and the patient's not settled and you're not winning with the ventilation, there's no point in inflicting that on them' (exp5).

So the nurse will only check the arterial blood gases when she feels the patient is *'settling in'* and she is going to get the result she is looking for. The blood test is therefore used to confirm, rather than question, if she has got the ventilation rate right. The nurse cannot rely on taking too many blood gas readings, due to the invasive nature of the procedure, and instead relies on her own assessment of the situation and the knowledge gained through working with this client group. So despite the nurse stating that all her practice is evidence-based and concerned with following gold standard guidance, it is evident that something much more extraordinary is occurring. The nurse is working far above the rules and guidelines that her more junior colleagues appear to be bounded by. The guidelines provide a good baseline to inform her initial assessments, but over and above this, the nurse appears to be working from her own experiential knowledge. This is the concern with official rules and guidance, in that while they can support expert judgement and decision-making, they cannot necessarily supplant it, as they are not sensitive to the nuances of practice and the contextual variations.

However, if we consider this nurse as being connected to her practice in a much more intimate way than the idea of following prescriptive rules indicates, we can see the nurse is present and highly attuned to the contextual situation. She is engaged in the environment in a very purposeful way, the objects and people she deals with have a 'ready-to-hand' quality, to use Heideggerian terminology, in that she is not considering them in a detached or analytical way, but rather as a means 'in-order-to' accomplish something. In this scenario, the ventilation machine serves a very particular purpose in helping her to improve the respiratory health of her patient, while her recordings of the patient's observations, her noting for tachycardia, or indications of hypotension, are not ends in themselves but are rather indicative signs of physical deterioration, and therefore have meaning in a wider world of significances. As a result, all these actions will only make sense if one has an understanding that nursing practice involves the promotion of health and the prevention of physical deterioration. Therefore, in Heideggerian (1962) terms, this nurse is engaged in a whole world of meanings, interpretations and purposes that he describes as Being-in-the-world. In this way, Heidegger maintains, our basic relationship with the world is concerned with the practical and the instrumental rather than the abstract or theoretical.

Another example of how a nurse learns to 'play' with knowledge is illustrated in example 6.2, in relation to titrating an intravenous medicine.

Example 6.2: *'I'll see how they go'*

'How did you learn to administer Iloprost that's quite difficult to give?

Iloprost isn't too bad you put a tiny little vial in 250mls of normal saline….

Oh O.K.

And you put it through a pump and you start it at 10mls an hour and you check the blood pressure every half an hour because it can make you tachycardic and make your blood pressure drop….but all this is what I've learnt through watching other people.

So you stood and watched them do it?

Yes and then you've also got your protocol as well, it will tell you what to start it at, how often you do the observations, what to look out for and then obviously from that you can put it up and some people can't tolerate iloprost very well, so you put it up by 10 if the blood pressure and everything's O.K., and they're not feeling sick, and then it's O.K. (so) you can put it up by 10. Then you check it again and put it up by 10 and then you may need to put it down again…..

Have you learnt to titrate it…..?

Yes as to me a year and a half ago I would have gone 'oh no'…..I would have had to go and say to someone their blood pressure is this what do I do now? …but now I can think right that's O.K., if I put it up by 10 maybe I'll come back and it's dropped by too much and I think no, right I'll put it back down again. So now I kind of….

And doing things yourself and having a bit of experience with iloprost have you ever turned it up and thought…. I shouldn't have done that?

Yes sometimes I think their blood pressure dropped a little bit but not by much and sometimes I think we'll see in half an hour, I'll see how they go and then obviously if I need to, put it down. Normally if people start to feel unwell, some people vomit and that kind of thing, there are other signs as well…..but you do kind of think oh……. and then because you're checking it every half an hour it sort of feels like if anything's going to happen you're there….

You get more confidence doing it?

Yes - so now if someone says that patient is on iloprost I say yes O.K. no problem, if you told me even a year ago I'd think oh no….. …..whereas before I'd be

thinking what if this happens what if that happens? and so-and-so is on their break when I want to ask them about it or…… whereas now I don't think about it and now I put it up, I may still need a bit of advice….

You probably get a sense of how people might tolerate it……?

Yes and sometimes if they've had it the day before and they only tolerated twenty so you might get them up to twenty, leave them on twenty for a little while then take them up to thirty you just see how it goes but you've got the knowledge that they've only tolerated twenty the day before…so you've got a bit of a guide. Whereas we had one man who had it up to sixty…and he was absolutely fine he felt a little bit hot but other than that he was absolutely fine……yes it's very strange and I thought maybe because he's a very big man….but I had a woman the other day she tolerated it very well as well, it's weird how some people just can and some can't….' (jnr5).

From the nurse's description, we can see how she has learnt to titrate the drug in relation to a patient's cardiovascular status. Initially she is concerned with the pragmatics of how to set it up in terms of volumes and rates, and is guided by the protocol in relation to this. However, more than this, she is guided by how the patients respond to it, as well as her growing confidence in administering the medicine. The nurse has learnt that if the setting is not quite right, and the patient is not tolerating it well, she can correct and alter the infusion rate. Therefore, she learns that, within certain boundaries, she can retrieve any errors. She is learning to use her own judgment in discerning what a suitable rate is and becoming more confident in making her own decisions, relying less on the support of her colleagues. The nurse is effectively 'playing' with the infusion to get the best outcome for each patient, according to how well they can tolerate the drug. Too much of the medicine can cause unwarranted side effects that if not heeded could be potentially life threatening. However, being too cautious may result in patients not receiving the most optimal therapeutic outcome from the drug. The nurse must balance these competing

demands, which can only be judged through experience in administering the medicine. This again involves a degree of 'getting the feel' of how to administer the medicine, as well as how to recognise potential side effects with individual patients, and it is this that ultimately guides the nurse in how to titrate the medicine, over and above any list of parameters.

However, this apparent need for concrete evidence and objective facts to guide practice appears to be a common concern for many nurses, as revealed from their nursing accounts. Many of the participants spoke about colleagues who, when seeking advice from them, wanted specific answers to specific questions, as the following example demonstrates in relation to wound dressings.

Example 6.3: *'there's no straight answer''*

'…and I think that's why some of the girls who work with me find that very hard……because there's not a right way because I would go and see a wound and dress it and put on dressing A, but someone else comes and puts on dressing B – still silver, it's still going to do the same thing it doesn't mean it's wrong. So really, it really is quite vague because there's no…there's no straight answer. There is no pathway I can say if the wound looks like this, dress with this or dress with that, as it's not the right answer. Wounds where they put on silver - I may put on negative pressure, it's not wrong, it's just that it would be a better method as we would draw the fluid out and it's not wrong to do other ways - because it wouldn't be wrong…… For example, I put a dressing on patients sometimes and I go back and have a look and actually nothing much has changed …….I'm doing the same thing every time. I can't go up and say 'this is it the 'star' dressing – this will work!' No not at all, not at all. And sometimes if you're using honey, putting loads of honey into a wound can make it too wet, so it's making sure you don't put too much on. You may put a dressing on and it gets worse -

but what else is going on? There might be an infection that may be making it worse, it might not be anything particular going on with the dressing……Yes and when I say, well this is a necrotic wound so we're using honey, put the honey on and it will clean it, come back to me and we'll start the next process. 'What do you mean start the next process?' You've got a necrotic wound you clean it and then it becomes granulated and then this changes the whole care plan for the granulated (wound).....and then it starts getting epithelialized and then you get an infection and you're back to necrotic again and you go back to square one and you start the process again. There's about seven care plans…seven plans of care for dressings, it's not going to go sloughy, clean, granulated, healed' (exp4).

This example illustrates that there are no prescriptive rules or definitive guidelines that allow individuals to reach an optimal solution. This means that there is no completely right thing to do, as what is right could only be understood in relation to the context or situation that an individual has to deal with. In the case of dressing wounds, protocols and guidelines might help a nurse to consider the different treatment options, but ultimately the nurse must use her own discretion to select what she believes to be the most appropriate one. The specialist nurse struggles with some of her colleagues' demands for a distinct and definitive answer about how to dress a particular wound. All that the nurse can suggest is vigilance as to what you are putting on, and the effect it is having. The condition of wounds is subject to change, not just as a result of the dressing applied, but also in response to the patient's general health. So there are no firm rules, no '*star dressing'* and no right answers as even when using, what is considered the most appropriate product, one might administer too much; resulting in an adverse outcome. Thereby continual on-going assessment is essential, as a nurse becomes aware of possible treatment options, depending on what the wound looks like. However, it also requires time for reconnaissance, a time to go back and check what has been occurring, to take stock, to rethink and plan again. So developing capability is not so much about having the right answers, but rather about developing the appropriate habits and

dispositions. In this way, individuals can explore situations to determine how they can achieve the desired outcome.

Despite many nurses being observed in practice, playing or experimenting with certain interventions to test out what works, or using their feelings and emotions to inform their practice, there was often a reluctance to acknowledge this on interview. This may be because they felt it was improper or unscientific, and that they may be accused of putting people at risk if they relied on such knowledge to inform their practice. So when asked if they based their decisions on feelings or intuitions, one participant commented '*quite a lot of it is but some of it isn't, a lot of my decisions are based on physiological data, for example observations and things like that' (exp2).* Yet earlier in the interview, she had acknowledged that she knew someone was sick without taking their observations, so there is a sense that one needs to qualify what one is saying in relation to using feelings or other, seemingly unsubstantiated, phenomenon to influence nursing decisions. In the following example, a nurse relates that she is cautious when it comes to undertaking certain clinical procedures but feels her practice is much more fluid in relation to other activities, such as in communicating with patients.

Example 6.4: '*I can't just say I'll do it and if it works out I'll be fine*'

'Some maintain a lot of learning is just by practicing and doing things and not very prescriptive, does it feel like that to you?

I know what you mean…I think in the beginning I was…but then I don't, if I don't know how to do something I'll go and ask and make sure, I don't like to, I don't want to just do it. I can't just say I'll do it and if it works out I'll be fine.

So you're cautious…..if its things like administering drugs of course but if its things like, I don't know, how to speak to people or you're in the moment so you just have to act…….

Yes I think you do….you sort of…..I think for different personality patients you sort of change the way you are…..especially like if you are there you try to match their personalities…Do you know what I mean?

Yes.

And build a relationship as well…sometimes you can have challenging patients and you think you need to be a bit more sterner with them…whereas other patients you can…they like a laugh and you can be funny or…..you've got to sort of gauge this' (jnr4).

In this example, the nurse is reluctant to admit that she learns by experimentation or trial and error, as she needs to check things out first, as she '*can't just say I'll do it and if it works out I'll be fine*'. However, this will only work if there is someone else to ask, or there is something tangible to ask, as not all our concerns can be clearly articulated in words. We may also be too caught up in the action and have no means to seek advice, but just have to base our actions on previous experience, or the way things have normally worked out for us in the past. A reluctance to admit that we are 'getting by' may make us appear flippant or negligent, however this may be the way we handle many, if not most situations, we come across in practice. This ability to feel our way through a situation may be based on our primordial understanding of how the 'world of practice' works, that is in keeping with ideas consistent with Heidegger's (1962) Being-in-the-world and Merleau-Ponty's account of motor intentionality.

In the examples in this chapter, the nurses appear concerned, at least in their espoused accounts, with doing the right things in terms of accessing the right information, protocols and tools. However, their 'theories-in-use' (Argyris and Schön, 1974) appeared to deviate from this, as their behaviour was guided by an urgency to act almost instinctively to the fluctuating conditions of practice. The nurses appeared to rely less on formal and analytical means to inform their practice, but were drawing on their own experience of having dealt with similar patients, or similar situations, before using a range of official, as well as unofficial, tools. While formal and analytical means of reaching decisions often presuppose a definitive way of perceiving a problem, there was evidence to suggest that the nurses were interpreting situations in more complex, equivocal ways. This was particularly evidenced by how nurses talked about the errors they had made in practice where, even though had known something in the form of facts, rules and protocols, their actions were guided by other factors that influenced how they interpreted the situation.

To return to the research questions, there is evidence to support the view that the nurses were perceiving and interpreting situations in ways that could be understood by a phenomenological account of knowledge. The nurses did not appear to relate to practice as subjects attending to objects, in a Cartesian sense, but rather as individuals engaging with objects and situations in a more Heideggerian sense, through a whole network of interconnected meanings and purposes. Therefore, as Dreyfus (1991) claims, the idea of a 'detached, meaning-giving, knowing subject' is replaced by the idea of an 'embodied, meaning-giving, *doing* subject' (original italics) (p. 47). However, Dreyfus explains it would be wrong to think that Heidegger is suggesting that practical activity has predominance over contemplative knowing, but rather that neither can be understood in terms of a 'self-sufficient mind and an independent world' (p. 49). In these examples then, the nurses appeared to have a natural, intimate and embodied way of going about in the world that they were not consciously aware of. As a result, it would appear that deliberative contemplation and

consideration of rules is not the normal *modus operandi* for these individuals, and prescriptive or regulative rule-following behaviour cannot account for the complexity of occupational capability. Nevertheless, that is not to say that there is not a normative quality to the actions of capable individuals, but rather that this normative behaviour cannot be explained by adherence to prescriptive or regulative rules. Instead, it may be better explained by recourse to other, constitutive rules, which will be explored in chapter seven.

Chapter Seven – Developing a constitutive understanding

The previous chapter proposed that the normative behaviour of nurses could not be understood by the following of prescriptive rules, guidelines or protocols. Instead, it suggested that nurses were involved in more spontaneous activities, in exploring their environment and investigating ways to achieve their desired outcomes. Nonetheless, the practice of these nurses indicated that there *was* a correct way of going about such things that was not subject to explicit rule-following behaviour. Such normative practice may be better explained by recourse to Searle's (1995) notion of constitutive rules. Using Searle's formulation, that X counts as Y in context C, Lum (2009) suggests that our behaviour can be said to conform to these rules, in the sense that professional practice involves a practitioner coming to *see* that certain things 'count' as certain things in certain contexts. This chapter will explore the nurses' apparent awareness of such rules, which allowed them to make judgements about the capability of colleagues. It will also examine how the nurses appeared to monitor their own practice in accordance with these rules.

7.1 Judging the capability of others

From their accounts of practice, the nurses were aware that there was a 'right' or appropriate way in which to do things; relative to a particular context or situation. They also appeared to be consciously, as well as unconsciously, making judgements about the capability of their colleagues. For example, the nurses could identify the individuals who they considered to be '*good communicators*' (*exp1*) and recognise when the practice of others did not meet their '*standard*' (*exp2*). Such judgements were often interpreted from the behaviours of others, which also influenced how the nurses engaged with these individuals. This determined whom they thought they could safely delegate tasks to, whose decisions they could trust and whose opinions they prioritised

over others. It was also evident that, although aware of the capability of others, the nurses could not articulate precisely what it was that either concerned, or reassured them, about the practice of these individuals. Such judgements and evaluations could be said to be made in relation to the constitutive rules informing that practice, as the following example demonstrates.

Example 7.1: '*yes you're O.K.*'

'I think a lot comes down to your personality type and the confidence you have and whether…. you've got good communication skills or not. You tend to pick up on your sicker patients just from observations, you look at certain nurses on the wards and you think 'yes you're O.K.'. If you're going to call me and you're going to tell me that there's a problem, I really do know that there's a problem because you don't just ring willy-nilly. Normally it's because they've done everything, they've got to the point now where they're like - I need help. But if you look at those nurses they're like really good communicators, quite jovial with their patients, quite confident, whereas the ones that are quieter, more withdrawn, ….they don't feel confident in their practice, they don't get the information that they need from their patients……. You get poorer outcomes with those styles….' (exp1).

In this example, the nurse is taking into consideration the capability of her colleagues in recognising when their patients are sick. This will help her to prioritise her referrals, to know which patient to attend to first. In her oral account however, the nurse appears to be equating capability with '*personality type*', present in those who demonstrate '*confidence*' or who are '*jovial*' with patients. These appear rather trivial characteristics to make such judgements. However, it is unlikely that the participant literally means that 'jovial people make better nurses', as this would appear absurd. Instead, the nurse is perhaps noticing subtle, nuanced qualities in these nurses that she is unable to clearly

express. This participant may be evaluating how knowledgeable these nurses are by interpreting their performance, according to the constitutive rules informing that practice, in that she is able to determine what 'counts as' capability in this situation. Therefore, to assert that nurses have '*good communication skills'* probably does not do justice to the quality she is alluding to. It may be that this participant considers these nurses are attuned to the needs of their patients, and alert to early signs of emotional distress, or physical deterioration. Similarly, the reference to '*jovial'* nurses may be indicative that these nurses are making a concerted effort to establish a caring and therapeutic relationship with their patients, all of which are considered essential nursing qualities.

The nurse also appears to be making some sort of consideration of what would be considered as normal or typical behaviour in relation to referrals, in that she is judging what is deemed as an 'appropriate' referral. Her statement that '*you don't just ring willy-nilly'* indicates that there may be certain constitutive rules that allow her to determine what is, or isn't, considered an appropriate referral. From the nurse's account we can gauge that referrals are judged as appropriate if the individual has '*done everything'* they can prior to seeking assistance. Again, there has be a background understanding of what 'doing everything' comprises, which is considered contextually appropriate in relation to a referral. In such a way, making 'appropriate referrals' is indicative of what 'counts as' being a capable nurse. So, in this example, the nurse appears to be evaluating the capability of others in relation to certain constitutive rules.

This ability to evaluate the capability of colleagues is also recognised in the professional literature. For example, in Sandberg's (2000) study into the expertise of car engineers, he noted that all of the study participants were able to identify colleagues that they considered to be the most capable or expert practitioners. However, these colleagues did not appear to know what it was about these practitioners that accounted for their superior performance.

Likewise, in Rubin's (2009) study into nursing expertise, colleagues were able to identify nurses who they considered were 'safe but not superior practitioners' (p. 172). This indicates that the ability to evaluate the capability of colleagues is common within occupational groups; although it is often difficult to define clearly which qualities distinguish expertise.

In the narrative accounts, the nurses often spoke about colleagues who did not appear to '*get it*'. This expression was employed in everyday conversations amongst nurses in relation to colleagues who appeared to lack capability. These individuals were perceived as acting inappropriately in certain situations; demonstrating a certain awkwardness in the way they attended to practice. This could be evidenced by the way they failed to understand the significance of an object, a word, or even an action, in relation to their practice. So even though they might be carrying out a particular task, they may be doing so in a limited way, indicating that they are unaware of the greater world of significances in which that act has meaning or, in other words, that they were unaware of the constitutive rules informing that practice. So within occupational groups there appears to be a common understanding of what '*it*' actually is, as example 7.2 demonstrates.

Example 7.2: '*people that don't get it*'

'I have worked with people that don't get it. I will speak to people and they don't get what you're saying or what you're asking. For example if you've had a day when it's really gone badly and they didn't get what you said about prioritising work and you ask them 'how did it go today?' and they say 'it went really well' and your opinion does not reflect what they've done……. when you are explaining things to people and they go off and do something completely different…… she wasn't engaging with her colleagues, and she wasn't communicating with them, and she wasn't aware of what the student or the CSW (clinical support

worker) were doing, and how they were allocated patients. She was clearly focused on doing just that job, doing the medicines, doing the observations, getting ready for the safety huddle.

What particularly concerned you?

Well she didn't know what was going on and it was 11.00 when we were all going to have an update for the patients on the whole ward. For example if you asked her 'what's happening with patient A?' and she had gone to the notes and read that but did not understand what was written. For instance, for one of the patients it was written in the notes they were to be NBM (nil by mouth) at 3.a.m. and they were going on the CEPOD (emergency theatre) list. Now when you questioned her and asked her what was the patient actually having done she didn't know, so that's the sort of things that worries me because you know anyone can read what is written, we can get someone off the street and say 'come with me read that and go into 11 o'clock handover', doesn't mean you understand it……similarly with medicines. I don't think they are sitting there thinking, oh…. I've got this drug and it interacts with this drug or her blood pressure's low so I shouldn't give that, they see that just because it's written up they'll give it. I sometimes think they don't have that, their knowledge base is not there – it's poor' (exp2).

In this example, the nurse appears to be making assumptions about what is the most appropriate behaviour to adopt when undertaking certain activities, in other words what '*getting it*' actually comprises. In determining this, she may be guided by some internal notion, or tacit sense, of what acting appropriately actually consists of, based on a background understanding of what a shift going '*really well*' involves. Such judgements may also be made according to certain constitutive rules, which indicates what 'counts as' capability in terms of managing your workload. However, it is evident from the narrative account that her colleague does not share these same understandings, resulting in her practice appearing less attuned to the clinical context. There appears to be a

difference then between how this individual feels they are doing, and how well others perceive them to be doing indicating, perhaps, that this individual's practice is not congruent with these constitutive rules.

The participant proceeds to outline the particular aspects of her colleague's practice that she is concerned about. It appears that while the nurse is able to perform a series of tasks, her practice is concerned with '*just that job'* at its most basic functional level, such as *'doing the medicines'* or *'doing the observations'.* So while this individual may be imitating the practice of fellow practitioners, she may not be demonstrating the required level of judgement and discretion in relation to these activities, or acting according to certain constitutive rules. This is illustrated by the nurse's apparent lack of consideration of the types of surgery the patient is being prepared for, or lack of consideration of the patient's current medical condition; prior to administering the medications. While some of these issues may result from a lack of information, for example not knowing precisely what the surgical procedure entails, or the pharmacodynamics of the drugs, they may also result from lack of a more fundamental understanding. The issue here, may arise because the nurse is not aware that she needs to *know* this information in relation to these activities, and this may be the primary concern. If it were simply a lack of information, then this could be readily addressed by accessing such information. However, as Paley (2007) suggests, not all problems can be solved by acquiring more facts. In this sense then, preparing patients for surgical procedures and administering medicines are not prescriptive tasks that can be carried out in an unconsidered way, according to set protocols, but are ultimately concerned with the wider purposes of optimising health and preventing harm. In this way these practices need to be consistent with the constitutive rules informing that practice; rules that are implicitly normative.

In this example, the nurse appears to be concerned with '*just the job*' at its most functional level, in terms of the tasks she needs to undertake. It could be argued that as she is performing all the tasks, albeit in a very limited way, she should be deemed as competent from a CBET perspective. This highlights the problem of expressing capability in terms of tasks or performance outcomes, in that while attempting to capture something rich and constitutive they end up expressing something far more literal and commonplace; thereby distorting the very things they try to represent (Standish, 1991).

The nurses in their narrative accounts often made explicit reference to rules or standards, however, these nurses appeared to be concerned with constitutive rather than prescriptive rules, as example 7.3 demonstrates.

Example 7.3: *'I have a standard'*

'*it is about communication, communicating with patients and it is also about how we all have our own standards about caring and compassion with patients*.

How can you tell if someone has this?

Well I have a standard of how I'd like to be treated, so I expect someone to go and talk to a patient, be polite to a patient, speak to a patient, not completely ignore the patient, not be unkind to a patient……hold their hand. With elderly patients speak nicely, speak politely and not say 'what do you want?' (aggressively) or 'are you ringing the bell again?' That's just kind of manners' (exp2).

There is vagueness in this account that refers to things like '*manners'*, which although not completely superficial, does not entirely encompass precisely what it is that constitutes capability. Nonetheless, what we can establish is that

this nurse has an awareness of how others interact with patients, and that there is a right or correct way to go about this. So there is a sense, in this account, of an awareness of certain constitutive rules which dictate the normal or most appropriate way to deal with others, for example in this case, the right way to speak to patients. Interestingly the nurse refers to this as her '*standard*', where others may have their '*own standards*'. However, it is unlikely that this is the nurse's own personal standard, but rather something she has learnt by being involved in certain shared practices, in what Heidegger may term as 'the-They' or *das Man*. It is clear in this example, that the nurse is making some kind of judgement about the practice of others who she believes may not share this standard. This means they have not acquired the social norms about how one should act, or how one should speak in such circumstances. Despite this understanding, the participant's lack of ability to clearly articulate this can often lead to conceptual deflation, in that while the nurse is looking for a behaviour that is congruent with constitutive rules, in terms of respecting patients and treating them with compassion, she reverts to a conversation about manners that can be interpreted as referring to something far more superficial.

This inability to express precisely what it is that constitutes capability can also lead to a sense of confusion or ambiguity about what it is that constitutes incompetence, as the following example demonstrates.

Example 7.4: '*I would think of that as incompetence'*

'*I think the competence based issues are ones you are able to tell by your own standards, so I think for the competence one, I think I have got quite high standards. If they surpass that I don't think it is a competence thing. If they are not doing the things that I said, for example if I get someone to do a set of observations and they didn't add up the NEWS (national early warning score) correctly, I would think of that as incompetence'* (exp2).

In this example, the nurse is attempting to illustrate what it is that constitutes incompetence, but again she offers a rather trivial example. In this case, she notes that an individual who cannot add up a NEWS score is incompetent. However, what is unclear in this example is the context in which this individual is unable to total the score. For example, it might be due to a simple arithmetical error, or it may be due to something much more fundamental, such as a lack of ability to identify a deteriorating patient using the NEWS score. The nurse does not make it clear exactly what she is referring to, although it is probably the later; however, this lack of clarity in her language might also indicate the former. In this way, the participant has a tendency to talk about explicit, observable behaviours i.e. the ability to total a score, when they are actually concerned with more fundamental capabilities constituted by certain background understandings i.e. a readiness to anticipate early signs of physical deterioration in patients. This is because being able to anticipate the early signs of physical deterioration in patients 'counts as' capability in nursing, and so is congruent with the constitutive rules informing that practice. However, the lack of a precise language to express this can mean that there is a focus on behaviours; rather than the understandings that give rise to those behaviours.

These examples demonstrate that practitioners are able to make rapid judgements about the capability of colleagues as an integral part of their day-to-day functioning. The capability of colleagues is therefore not an abstracted problem, but a very real and immediate one. It affects whom we feel safe to delegate work to, whom we report matters to, as well as how much supervision we feel others require. So while the issue of what constitutes occupational capability can appear to be a rather ephemeral and difficult thing to clearly articulate, in actuality practitioners may be making considerations of this kind on a daily basis throughout their working lives, as example 7.5 illustrates.

Example 7.5: '*I don't know if I can trust these people*'

'I always think like last night I was on with three agencies (nurses) and I just thought… if anything happened I don't know if I could trust these people….and it's awful and dreadful to think that…….but then as the shift went on, one I probably wouldn't have trusted, but the other two, I could say, I felt confident with these two. And then you just feel more at ease as if something had happened, you'd know that they'd be there…

Yes ……so you felt O.K. with two but not the third…?

Well one of them …… her side-room was free ……..and three patients came in and one needed to go in this room and she says 'I don't know if I can cope' and I thought now there's not that much going on, it's a night shift and if you think you can't cope - that's why I sort of thought….

You were a bit worried….

Yes ……but I don't think necessarily that she couldn't cope, I think it was because…because it was all calmed down and I said 'are you happy to take this lady when she comes in?' It's not really the night I'm worried about it's the morning and it's only one more patient and if you need help, I have told her, 'you just need to ask me as I don't know when you need help. If you've got all these fluids scattered about I don't know what you're doing'. I said 'you just need to say something and I'm happy to help you, tell me what you want me to help you with'. Well she didn't, she just said 'well I've got this and that to do' and I said 'what would you like me to do?' or 'could you do this? could you do that?' I don't think it was necessarily that she couldn't cope…..it was just in the morning she just didn't want an extra patient - I think that was more what it was.

Oh there was something more….?

And then in the morning apparently when she was handing over the lady in the side room they said 'has she got any past medical history?' and it wasn't on the

handover sheet and she said 'yes but I don't know what it is'…….and to me that's not good enough…' (jnr5).

Measuring the capability of colleagues appeared to be an important consideration for the nurses, especially when they were working as part of a team. In this example, the nurse has arrived on night duty with three agency, or temporary staff, all of who are unknown to her. She therefore has to make some sort of judgement as to how much help and support they can be to her over the coming shift. She gets a sense very early on that two will be fine, and this makes her feel '*more at ease*'. However, she is concerned about the third nurse who says to her '*I don't know if I can cope*'. The nurse appears to weigh up this statement in light of the situation and concludes that this is an inappropriate one. She is therefore making some sort of judgement about what could be reasonably expected of a nurse relative to the situation, or what 'counts as' capability in this context. There are clues that this nurse is not doing quite what would be expected of her, she is saying she cannot cope, and yet she is not asking for help in the usual way. The nurse also notes she has '*fluids scattered about',* perhaps indicating a disorganised and unsystematic way of going about things. Perhaps, more significantly, the participant suspects that the reason the nurse says she cannot cope is because she doesn't want an extra patient to hand over to the morning shift. This raises concerns about this individual's motivation, and ultimately it is this that perhaps worries the nurse more, as being unmotivated to care for patients, is incongruent with the constitutive rules of nursing practice.

In these examples the nurses appear to be 'testing' their colleagues to gauge if they can trust them or not and this is judged, in a very general sense, by how they deal with certain situations. These judgements are based on relatively little evidence that is at some remove from the ideas prevalent in the discourse of CBET, where capability is commonly inferred from evidence that is matched

against a comprehensive list of prescriptive statements, as advocated by Jessup (1991) and Wolf (1995). However, if we consider these nurses have developed a constitutive understanding, in the sense that they are able to *see* things as certain things that 'count' as certain things in certain contexts, then this may explain how they are able to make such instantaneous judgements about the capability of others, from such brief interactions. This suggests that individuals have a certain understanding of what behaviours and actions are normal, permissible and appropriate with respect to a specific situation. Therefore, as observers as well as performers 'we implicitly and necessarily appeal to some notion of what 'counts as' a competent performance or a skilful act' (Lum, 2009, p. 144). So within the field of nursing, capable nurses appear to have a constitutive understanding that allows them to determine what comprises capability in any given situation.

7.2 Learning to act in a situation

While individuals were conscious of how their colleagues practised, according to these constitutive rules, they also appeared to be monitoring their own practice against the same rules. This included the right way to talk, the right things to pay attention to and the right way to behave. There was also evidence to suggest that the nurses were developing a whole repertoire of ways of dealing with situations, by measuring and matching their performance against that of others, which may also indicate that they were developing an awareness of the constitutive rules informing that practice. This is illustrated in example 8.1, where the nurse is conscious of entering a new environment and is learning how to act in it.

Example 8.1: '*am I breaking some sort of rule?*'

'I'm still very unfamiliar with the hierarchy, the different job titles, the doctors everything. Were you allowed to approach a doctor…wasn't you?.....Whether I

could help myself to the notes…I didn't know if I could sit on a bed or not…could I even go up to a patient? Can I talk to a patient if they've got a mask on? Can I talk to a patient if they've got a drip? Could I join the ward round? All of these things if you've never done them before… all of a sudden…….it's just finding your way and tentatively asking 'am I allowed to do this?.....Will I get told off? Am I breaking some sort of rule?' (exp3).

Within this account there appears to be a general tentativeness, or awkwardness, and almost a fear of doing the wrong thing, or carrying out activities in an unorthodox manner. What is evident is that the individual senses that others in this environment appear to have a normative way of going about things. This will include such things as, knowing whether it is feasible or not to sit on beds, or talk to patients with *'a drip'* or *'a mask on'*. This can be seen as a further example of Heidegger's (1962) ideas on 'the-They' or *das Man,* which dictates what one should do in any given situation. In this example, the nurse senses a pressure to conform to, what might be termed as, constitutive rules to avoid feeling awkward or uncomfortable. From this perspective, she will have to learn the 'normal way to speak to doctors' or the 'normal way to interact with patients', as there is a fear of making a faux pas or a social blunder by '*breaking some sort of rule*'. In many ways, this supports the ideas of Lave and Wenger (1991) in relation to communities of practice, where learning is a means of being in the social world rather than a way of coming to know about it. It also indicates that occupational capability is not so much concerned with the development of particular skills but rather, as Evans *et al.* (2006) suggests, 'capacities developed through participation' (p. 15).

According to Heidegger, this normative behaviour is not brought about by single individuals or even a plurality of mutual beliefs but is rather dependent on an 'agreement in ways of acting and judging into which human beings, by the time they have *Dasein* in them, are always already socialised' (Dreyfus, 1991, p.

144). In this way, Heidegger is anticipating a much more existentialist means of engaging with others than that outlined in Lave and Wenger's account. This means rather than learning how to act in a social world, the essential nature of being is essentially *as* a social being, therefore *Dasein* is always outside of itself, acting according to these social norms (Heidegger, 1962). From this perspective the natural state of being *always* involves being with others, as Merleau-Ponty says,

> …the world is not an object whose law of constitution I have in my possession; it is the natural milieu and the field of all my thoughts and of all my explicit perceptions. Truth does not merely 'dwell' in the 'inner man', or rather, there is no 'inner man', man is in and toward the world, and it is in the world that he knows himself
>
> (Merleau-Ponty, 2014, p. lxxiv).

So the nurse is not just learning how to act and engage with others, but also how to act and engage in a particular 'world of practice', constituted by an interconnected network of meanings, understandings and involvements. She may also be developing a certain understanding that disposes her to act in certain ways, which would be considered congruent with the constitutive rules informing that practice.

In example 8.2, we can get a sense of how a nurse might learn from the practice of others. In this case, the nurse learns how to break bad news to relatives by observing her more experienced colleague.

Example 8.2: '*so I guess I must have taken that*'

'*she was looking for a relative to come in and asked would I come with her to……..to listen. I didn't really want to but actually, you know what, because*

nobody actually teaches you something because you can never teach that, you don't know what people's reactions are and I went with her to tell this man, the son, that she'd died and, it sounds quite bizarre, but it was a really good experience because she did it really nicely. You know if I'm going to have to do that to people that's kind of how I'd like to do it. So I guess I must have taken that' (*exp2).*

Nurses in their verbal accounts could often recall details of how they first learnt to deal with exceptionally stressful or emotional situations. Many felt that dealing with such situations could not be taught, but rather had to be experienced first-hand. In this example, the nurse has to pick up on the nuances of her colleague's performance as she handles the situation. Nurses could also recall learning from others in less emotional or stressful situations, particularly when they were overtly aware of learning something new, as one nurse explains, **'***I am one of those people who doesn't like to do things unless I know what I'm doing….. If I think I'm going to do things I try and go and observe someone else doing it…..so even though I might know the kind of skill and the thing in my head….I might just like to see how someone else plays that out first' (exp2).* Observing how others 'play things out' appears to be an important part of learning how to deal with situations and nurses can learn by '*taking hints from what the other nurses do' (jnr4)* and learning '*what was successful for them ….to put into my own spiel' (jnr2).* So the nurses appeared to be acquiring a complex repertoire of ways of saying and doing things, which were congruent with the norms and culture, or the constitutive rules, of the occupational group they were aspiring to join.

While the nurses were recalling very unusual and explicit things that occurred in their practice, they will undoubtedly have noticed other more nuanced things as well. According to Dreyfus (1991), the majority of basic life-organising self-interpretations come about through socialisation, and not

necessarily by us purposefully seeking them out. For example, he notes, we learn to behave as older brothers without having these specific purposes in mind. In the same way, individuals can begin to develop capability by undertaking certain organisational activities that constitute that practice, and become disposed to act in certain ways that they are not consciously aware of. Heidegger maintains that it is through such engagement that *Dasein* builds an identity for itself, in terms of who they are and what opportunities are open to them, as 'in everyday terms, we understand ourselves and our existence by way of the activities we pursue and the things we take care of' (Heidegger, 1982, p. 159).

In this way, the nurses can begin to develop identities as nurses through partaking in nursing practices. Therefore 'nurses will say what nurses say' through such things as learning the '*spiel*', and 'do what nurses do' through seeing how others '*play things out',* as there will be an awareness of 'the-They' in all their practices. This supports the notion of occupational capability as interpreted as 'ways of being', where capability is concerned with ways of becoming and not just ways of knowing, as illustrated in the accounts of expertise by Conway (1998), Sandberg (2000) and Dall'Alba (2009). We can get a sense of how the nurses are beginning to develop a repertoire of capabilities that allows them to deal with a whole variety of situations encountered in clinical practice, in examples 8.3 to 8.5. It could be said, in these examples, that the nurses are adopting practices that are congruent with the constitutive rules informing nursing practice.

In example 8.3, the junior nurse talks about how she is learning to deal with various situations that she has encountered in practice.

Example 8.3: '*situations are experienced differently*'

'Are you learning from these situations are they getting easier to manage as you experience more of them?

Um….I don't know, it's not easy for me. I'm just trying to cope with it, it's never easy. I feel I am getting a bit confident when we have an emergency now more than I was at first it was a bit tough for me. I feel now when I'm dealing with cardiac arrests…I know what I'm meant to be doing….whereas before I wasn't sure what my role should be really…I didn't know what I was meant to do.

You didn't know whether to run and get the trolley or…?

You're all over the place aren't you? Trying to get the trolley and trying to resuscitate the patient it is really…lots going on…..situations are different aren't they, situations are experienced differently, but I've managed to cope in a different way and somebody says you did good there. The patient was septic and I spotted it…but I didn't realise that I did well' (jnr3).

In this example, there is a sense that the nurse does not know how to behave and what is expected of her, or what her '*role should be'*. So, she is beginning to learn the right types of behaviours to demonstrate and the right way to conduct herself in relation to the situation, as she tries to '*cope with it*'. What is interesting about this account is that the nurse does not always appear to recognise or appreciate when she has performed something well, for example in noting the signs of sepsis. Instead, this has to be pointed out to her by her colleagues. In order then, to consider oneself as having performed something well there has to be some sense of what 'performing well' actually comprises. This in turn may be gauged by reference to the constitutive rules informing that practice. In this example, the participant's colleagues may recognise that her performance is congruent with these constitutive rules, as they tell her '*you did good there'*. In this instance, the feedback is explicit and direct however, it is likely that, in most cases, feedback may be far more subtle and discreet.

This example also demonstrates that the way we learn to deal with situations is not guided by our cognitive sense of knowing something, but rather concerns how we instinctively perceive and feel about that situation, that in turn guides our actions. This concurs with Heidegger's (1962) ideas that our 'common-sense understanding is a kind of knowing-how and not a propositional knowing-that' (Dreyfus, 1991, p. 117). In this example, the nurse recognises that as every '*situation is different'* it will be '*experienced differently',* so no cardiac arrest situation will be the same as the next. However, the experience of having dealt with one situation can often help us to deal with another similar situation as, according to Dreyfus, we can never be in the same situation twice. So learning to deal with any situation appears to be intimately linked with a form of embodied cognition, where individuals are physically and emotionally attuned to that specific situation. In this way, much of our ability to deal with situations is essentially pre-cognitive and pre-reflective, as Polanyi (1966), Titchen (2009) and Green (2013) suggest.

There is also a sense in the nurses' accounts that, not only are they participating in practice in a fluid and spontaneous way, they are also becoming someone different through such practices, as example 8.4 illustrates.

Example 8.4: '*you learn to become someone different*'

'*If you're going to build a relationship with someone you've got to act in a way I suppose that they can relate to and they like being with, they are familiar with. Now if I was formal all the time that would be fine, I would get my foot through the door fine – but to build a relationship you have to act in a certain way and I had one patient who used to call me his daughter 'alright daughter!' He used to give me a big kiss and I'd give him a big hug and what have you …..but you could not do that with everyone……Some people are very straight down the line and listen and say this is the way I act and I felt I benefited from (being different)*

with that gentleman.....you can pick it up and get it completely wrong sometimes and offend people but I suppose you learn by listening to them, what they're saying, how they're saying it, their accent and where they're from, you know - how they look. You can pick up just from observing someone...to start getting it and reflecting back to them their own way of doing things....the way they stand, the way they move and express themselves……..and in this way you learn to be someone different and you learn to become someone different……..in every situation you are aware of this sense of being' (exp3).

This nurse appears to have developed a professional way of being, in terms of how to enact her role in relation to her diverse client group. We know this nurse considers she has a unique style in the way she communicates with patients. She appears to be highly sensitised to the patient and the context in which she acts and, in this example, the nurse marries her actions to be more in tune with that of her patients. This supports Gallese's (2009) ideas on the role of mirror neurones that allows individuals to mimic or imitate the actions of others. In this sense, allowing nurses to attend to the activities and emotions of others (Green, 2013), which Benner (2000) suggests is an important feature of nursing expertise.

In this situation, there appears to be an intimate connection between the nurse and her immediate environment that guides her actions. This is not just a case of using the right language, or adopting the right approach, or the right techniques, but instead appears much more integrated into a whole way of being with another. This is the kind of capability that is demonstrated in fluid performance, as highlighted in accounts of expertise by Benner (1984), Dreyfus and Dreyfus (1986) and Schön (1991). When asked later how she developed these abilities the nurse is unable to explain, this is probably because they came about pre-verbally, tacitly and subconsciously. The nurse has learnt a way of acting naturally in her clinical environment, in being able to adapt herself to the

subtle, nuanced and fluctuating conditions of practice and the right way to behave that is governed, not so much by prescriptive, but rather constitutive rules. In this way, she is able to match her behaviour and mannerisms to that which is most appropriate to each patient, to ensure they feel as natural and comfortable as they can in her presence.

In such a situation, it may be possible to assert that the nurse has developed a particular disposition in relation to the way she practises, based on certain background understandings (Searle, 1995). This allows her practice to appear normative, in that she is aware of the right way to interact with patients, which would be considered contextually appropriate by her professional colleagues. Yet this nurse may be unaware that she is following any rules, or even aware that any such rules exist. In this instance, it may be possible to infer that the nurse is disposed to act in certain ways because she has developed an understanding of these constitutive rules, or what 'counts as' capability within certain situations.

In the final example the participant recounts how she has developed an understanding of what is considered right or wrong, in terms of her nursing practice, which supersedes the following of any prescriptive or regulative rules.

Example 8.5: '*you just know what you're doing*'

'…as I've developed I feel I am much more natural now in the clinical field, I don't worry so much as I have a certain feel about what is right or what is wrong……..I don't need to check this or look this up…You just sort of know what's right….You just know what you're doing. You feel you can make your own decisions, as you know what is right or not right….If you had to go to the NMC you know you could defend your practice ….as what you did, or how you acted was in the patient's

best interest…..and it's not necessarily because you've followed some rule, or done X, Y, or Z, but you just know yourself it was the best, if not the only right action to take at that time. This is not something you can always explain to the juniors and in fact you discourage them from working in this way, as they don't necessarily have that knowledge, or that understanding….' (exp4).

In this example, the nurse appears to demonstrate a certain background understanding in relation to the meanings and purposes that inform her practice. This enables her to judge whether her actions are right or appropriate, or not, with reference to these understandings. This also means that she can act more spontaneously and instinctively to situations in practice based on these understandings. The nurse also feels she could provide an account of her actions to her professional regulator, if required to do so. It could be interpreted that this is because she has developed an understanding of the constitutive rules that inform her practice; an understanding not perhaps shared by her more junior colleagues.

In these examples, the nurses appear to be developing occupational capability by becoming more finely attuned to, and better able to deal with, the situations they commonly encounter in their working lives. This involves how they relate to, and deal with, equipment and other people within that environment. However, more than this, the nurses also appear to be developing an awareness of the implicit background understandings relative to that practice, which gives meaning to their actions. In such a way, their practice can become more natural and fluid, as they begin to manage situations better. As a result, occupational capability can be seen, to use Heidegger's terminology, as 'being able to manage something' or 'being a match for it' (Heidegger, 1962, p. 183) and this can be explained by a growing awareness, by an individual, of the constitutive rules that inform that practice.

In this chapter it was noted that although occupational capability was difficult to define in precise terms, it was evident from the nurses' espoused accounts that they were aware of when they were, as well as when they weren't, working with capable practitioners. However, this awareness could not be articulated in any coherent way, resulting in the nurses relating to rather trivial, or superficial things, which they had picked up in the performance of others. Nonetheless, these nurses appeared to be attuned to the practice of others, demonstrating an awareness perhaps, of whether they were conforming to the constitutive rules informing that practice. It could be assumed that it is not so much the overt skill, performance or behaviour that they were judging, but rather whether that skill, performance or behaviour was congruent with these background understandings or what 'counts as' capability, relative to these situations. Therefore, the consideration of nurses' practice in relation to constitutive rules may be one way of gaining greater clarity over what it is that constitutes occupational capability.

There was also a sense in the nurses' accounts that they could act with greater freedom and spontaneity as they became more familiar with the constitutive rules that informed that practice. Occupational capability appeared to be developed over time, through repeated exposure to certain events, where nurses became more adept in learning how to act and deal with situations in ways that were congruent with these constitutive rules. Occupational capability can therefore be demonstrated,

> …when we go about the spontaneous, intuitive performance of the actions of everyday life, we show ourselves as knowledgeable in a special way. Often we cannot say what it is that we know. When we try to describe it we find ourselves at a loss, we produce descriptions that are obviously inappropriate
>
> (Schön, 1991, p. 49).

In this way, the nurses appeared to have developed a particular 'style' or repertoire of behaviours that appeared to work for them in certain situations. So occupational capability was concerned with a way of becoming or a way of perceiving and relating to the 'world of practice', where nurses were not just learning what nurses do but also who nurses are.

To return to the research question, it appears that the nurses' practice was rule-governed. However, these were not guided by formal, prescriptive or regulative rules; instead, the nurses appeared disposed to follow constitutive rules in relation to the way they practised. This meant that they demonstrated an awareness of 'what counts' as a competent performance. They were also aware of how they and others practised, in accordance with these rules. This suggests that the following of constitutive rules provides a richer account of the normative behaviour demonstrated by capable individuals. Becoming occupationally capable then, appears to involve the development of a constitutive understanding that enables individuals to see things as certain things and interpret things in certain ways. The following of such constitutive rules also demonstrates a certain correspondence with a phenomenological account of knowledge.

Chapter Eight - Conclusions and recommendations

This study set out to explore the kind of knowledge and understandings that importantly constitute occupational capability, and how they are made manifest in the everyday practice of registered nurses. One of the motivations for this study was a general dissatisfaction with the official discourses, derived from the theory-practice dichotomy, in accounting for such capabilities. This study observed and interviewed nurses to ascertain how they performed and described their practice, in the hope of revealing the knowledge and understandings that informed their practice. It also attempted to interpret these behaviours, to ascertain if the capability of nurses is constituted by a kind of phenomenological understanding, by addressing two key questions posed at the beginning of the study, which I shall now revisit.

8.1 The research questions

The first question asked whether nurses were perceiving and interpreting situations in ways that could be understood by a phenomenological account of knowledge. From this study, there was evidence to demonstrate that they were. For example, they appeared to be 'assigning functions' to objects and entities in relation to the activities they were engaged in, as anticipated by Searle (1995). In this way the objects they encountered, such as the cannula, medicines, nasal specs, swabs or prescription charts were seen, not in terms of their physical properties, but rather according to the meanings and purposes imposed on them by that individual. So swabs were for 'exploring wounds', nasal specs for 'administering oxygen' and cannulas for 'obtaining blood' or 'administering intravenous medicine'. There was also a kind of purposefulness to the actions of these nurses, so while engaged in activities such as recording observations, titrating medicines, swabbing wounds or interpreting blood results, they were concerned primarily with the wider purposes of nursing, which involved

promoting health and preventing further physical deterioration. Throughout the nurses' practice, there seemed to be an awareness of the fragility of human existence that provided a background meaning and significance to all their actions that transcended the actual carrying out of any specific tasks.

From the research, it was also possible to ascertain that the nurses were interpreting a particular picture of reality, according to their conceptual schemata. So the nurses never attended to practice in a neutral way but rather had certain *a priori* 'habits of thinking' that influenced how they perceived and interpreted situations (Abercrombie, 1989). Capable nurses appeared to have developed certain background understandings in relation to their practice that, Searle (1995) maintains, facilitates a certain kind of 'readiness' to anticipate particular events and situations. From this perspective, the nurses were prepared to see particular phenomenon, such as 'deteriorating', 'delirious' or 'unconscious' patients. This interpretation did not come about by the nurse encountering something and then interpreting it as something else, but rather in recognising such phenomenon as things in themselves, as interpretation is 'grounded existentially in understanding' (Heidegger, 1962, p. 188).

These findings suggest that in order to develop capability, a nurse must learn to ascribe functions to objects in a way that is appropriate and congruent with how other nurses also ascribe functions to these same objects. Therefore, the nurses were learning to perceive things in relation to what a sick patient looks like, or what differentiates an appropriate referral from an inappropriate one, or to recognise certain objects, like nasal specs, in relation to the activity of administering oxygen. The nurses also seemed to engage in practice in a very physical, emotional and embodied way. This allowed them to develop an intuitive feel for a situation, and the ability to anticipate if something was going well or not through a kind of bodily awareness, consistent with Merleau-Ponty's (2014) ideas on embodied cognition. In this way, they appeared to associate

certain events with particular body states, which allowed them to '*act* smartly without having to *think* smartly' (original italics) (Damasio, 2006, p. xvii). So, the nurses were not only disposed to see specific phenomenon within the clinical field, they are also emotionally pre-disposed to interpret situations in certain ways.

The nurses also appeared to be modifying and adapting the way they perceived and interpreted situations, as they encountered new or unusual situations. They seemed to have learnt that for certain patient groups *'abnormal is normal for them'*, they were also modifying their schemata to distinguish between an insulin syringe and a normal ml syringe, or that patients with meningitis may not always present with signs of petechiae. This modification occurred as a result of feedback from their environment, when their current perception or interpretation of a situation appeared inappropriate. There were also examples, highlighted in the study, where certain individuals may not have adapted or modified their schemata, relative to the contextual situation. In such cases, their professional colleagues identified their practice as weak. These examples included the nurse who is unable to relate what type of surgery the patient is going to theatre for, or who is administering all prescribed medications with little, or no, consideration of the patient's medical condition.

So it is also possible to conclude, that an important part of occupational capability involves the ability to adapt, change and modify our schemata to deal with situations in ways that are considered appropriate by our fellow practitioners. However, prior to embarking on a career, individuals will already have developed various perceptions and interpretations of how to act in the world at large. This means that these understandings must alter to accommodate any new perceptions and understandings, commiserate with the occupational world one is aspiring to join. It is also conceivable that individuals may struggle to modify such schemata, especially if they have served them well

in the past and, as individuals are unaware of what schemata they employ in any situation; they may be very difficult to adapt.

In response to the second question, there was evidence to suggest the nurses practised in ways that were rule-governed. However, this rule-following behaviour could be better understood as the following of constitutive, rather than prescriptive or regulative, rules. While the nurses were aware that there was a correct way to go about things, they did not appear to be following explicit rules, but were rather developing perceptions and understandings in a much subtler and nuanced way. In this sense, it could be said that they were disposed to engage in rule-following behaviour, without having any overt awareness of any specific rules. This meant their perception of what was the 'right' or 'correct' way to go about things was far broader and more interpretative than the following of any prescriptive rules might indicate. This also meant that the nurses were able to consider their own practice, and that of others, to gauge whether it was appropriate or not, relative to such rules. It was also suggested that once a nurse had acquired a sense of these constitutive rules, they were able to act with a far more instinctive feel about the right way to go about things that would be considered consistent with such rules.

If occupational capability is concerned with developing the right perceptions, habits and understandings as those of our fellow practitioners then it can be understood, according to Lum (2009), by acquiring a constitutive understanding, which involves a practitioner coming to *see* that certain things 'count' as certain things in certain contexts. In this way, the behaviour of capable individuals can be said to conform to certain constitutive rules that inform that practice. This also suggests that if an individual's actions do not conform to how others would behave, when faced with a similar situation, it can be inferred that they have not developed the appropriate constitutive understanding in relation to that practice. This may mean that what they see as

pertinent or relevant in a situation may differ from that of their fellow practitioners. Such individuals may be practicing in ways that Schön (1987) described as 'over learning', or Rubin (2009) identified as 'safe but not superior practitioners', in that these individuals may learn to carry out certain activities but remain unaware of the contextual nuances, that give these actions meaning. This may result in their practice being interpreted as inappropriate, within certain contexts, by fellow practitioners. It also means that no amount of theoretical input or practical experience can necessarily enhance the practice of these individuals, if they are unable to develop a constitutive understanding congruent with that of their fellow practitioners.

8.2 A phenomenological account

From this study, it is possible to conclude that the nurses appeared to have acquired a kind of phenomenological understanding that is essentially constitutive of, and fundamental to, their occupational capability. According to this account, capability involves coming to inhabit the 'world' of an occupational group, disclosed to us through a whole network of interconnected meanings and understandings, constructed through our interaction and engagement with it. To be capable then is to be immersed in the world of nurses through our practical engagement in situations; rather than any abstract contemplation of concepts. When we inhabit this world we will develop a certain predisposition or 'readiness' to see things as certain things and become emotionally predisposed to connect certain events with certain body states.

In this world, objects and entities will also be understood, not in terms of their physical properties, but rather in relation to the activities in which they are used. Such activities will also have meaning in relation to a wider world of significances and involvements. When we attend to practice then, we are disposed to adopt a certain perspective, or a particular stance on the world. We

will adopt certain normative practices congruent with that of our fellow practitioners, with the same purposes, goals and values in mind. Such knowledge involves a kind of knowing how to go about things, how to deal with things and how to monitor and adapt our behaviour in accordance with the practice of others. It also involves learning to negotiate or find our way around in this world, to be able to deal with things in it, and cope with situations that we commonly encounter. Through such practice, individuals will not only learn what nurses do, but also who nurses are, which involves the 'integration of knowing, acting and being' (Dall'Alba, 2009, p. 132). Dreyfus (1991) suggests this is how we learn to enact all roles, such as that of older brothers, without having any of these specific purposes in mind. This is the same way, I want to suggest, that we learn to enact our occupational roles.

8.3 Recommendations

As a result of these considerations this study recommends that:

1. Emphasis should be placed on the *sense making* of nurses as they learn to 'inhabit' the occupational world of the nurse. Those involved in the education of nurses should be aware that nurses do not inhabit a distinct and objective reality, but rather one shaped by certain background meanings and understandings. Therefore, the provision of supervision sessions within the professional curriculum would provide a useful forum for nurses to discuss their development as nurses, as they learn to perceive, interpret and act in this world.

2. The normative practice of capable individuals can also be better understood as the following of *constitutive rules*. These rules are capable of accommodating certain background meanings and understandings that constitute that practice. Being alert to this would provide nurse education with a richer discourse to discuss issues relating to occupational capability that transcends the following of any overt or explicit rules. It would also mean that nurses could articulate what it is that constitutes competence in a way that avoids its expression as behavioural characteristics.

3. The nurse education curriculum should focus less on the meeting of learning outcomes that are secondary and derivative of the kind of understanding that is more fundamentally at issue. Instead, there should be a focus on the tacit and embodied nature of knowledge that gives rise to such outcomes, and how such understandings can be developed in aspirant nurses. This means the curriculum should focus on who nurses are *becoming*, rather than on what they can necessarily perform at the point of qualification.

8.4 Strengths and limitations of the study and possible contributions to new knowledge

One of the advantages of this study was the ability to capture nurses in real time, undertaking their everyday practice. This study was therefore concerned with the normal and the mundane, rather than on nurses' recall of salient events. This meant nurses had to deal with those situations that occurred in practice at the time of the observation. It also meant that I, as the researcher, was able to discuss these practices with participants that I had also witnessed,

participated and experienced with them. However, I was aware that what I interpreted as significant in their practice was influenced by my own bias, as I was not a neutral observer. This meant some of the issues the participants discussed had more salience for me than others. This can be seen as a limitation in the study, in that I adopted a less objective and critical stance towards their practice perhaps, than one who is less immersed in these practices. Alternatively, this can also be seen as a strength, as being conversant with the language, meanings and understandings embedded in this practice, enhanced my ability to interpret their behaviours.

Another strength of the study was my familiarity with the clinical environment as well as the nursing staff. I could therefore anticipate the kinds of things I could observe in practice and the sort of questions to ask at interview, which may have compensated somewhat, for my lack of experience as a researcher. This also meant I could select a relatively small sample of participants as I could anticipate the richness of the data I could gain from this sample. I was originally unsure whether to select capable, or less capable, practitioners to participate in this study. However, as the study was concerned with capability, I decided to select participants that were deemed as capable by their fellow practitioners. Nonetheless, selecting less able practitioners may have highlighted different ways in which these individuals perceived and interpreted their practice. Further empirical work may therefore prove beneficial, in gauging whether deficits in capability can also be understood in terms of a lack of phenomenological understanding.

I believe this study contributes to new knowledge by exploring nurses' practice in relation to a kind of phenomenological understanding. I have tried to illustrate how this understanding encompasses ideas derived, in part, from the work of Heidegger, as well as those from other theoretical traditions. It seems to me that, like Heidegger (1962), Polanyi (1966) and Merleau-Ponty (2014), individuals do not relate to the world as subjects encountering objects, but rather in a way that is far more immediate and embodied. I also propose that, individuals will learn to see what is important or salient in their environment, through the employment of schemata (Abercrombie, 1989) or mental models (Klein, 2009). I also want to suggest that, individuals are emotionally predisposed to pre-empt certain events (Damasio, 2006) and, as a consequence, will develop a 'readiness' to be vigilant of, and attend to, certain phenomenon within their environment (Searle, 1995). I therefore anticipate that, individuals never attend to the world from a neutral perspective, or 'schemata-less' (Lum, 2009). Instead, it appears to me that, capability is developed, as Lave and Wenger (1991) propose, through our interactions in the world, through our engagement with the things and the people that inhabit it. In this sense, I concur with Heidegger's (1962) suggestion that, capability is more concerned with being, rather than simply knowing.

I also believe that, this account of capability can avoid the expression of knowledge in theoretical or practical terms. Instead, I maintain that, knowledge is whole and complete in the individual, as they learn to 'inhabit' the 'world of practice'. I propose that, this account can supersede Dreyfus and Dreyfus' novice to expert model which assumes, as expertise develops, individuals will rely less on rational and analytical means for making decisions, and more on tacit and intuitive reasoning. Instead, I maintain that, as individuals develop capability, they will begin to modify their schemata, or mental models, so that they can see and interpret the 'world', in ways that are congruent with that of their fellow practitioners. Therefore, I suggest that, capability may be more concerned with how readily individuals can modify such schemata.

I also want to claim that an account of capability, in terms of a kind of phenomenological understanding, can explain the normative practice demonstrated by capable individuals, by recourse to the notion of constitutive rules. I believe that this can mitigate the fears of those who associate such knowledge, which is said to lie in the tacit, intuitive and embodied dimension, as being subjective, biased and uninformed. Instead, I propose that, there *is* a normative quality to capable performance, so it is possible to gauge what is 'right' and 'appropriate' in any situation, according to such rules. I also maintain that, the incorporation of this notion of constitutive rules can provide a more accessible account of capability for Western thinking, than Heidegger's ideas on Being-in-the-world. I therefore conclude that, this notion of a phenomenological understanding can offer a richer, more coherent, account of the knowledge and understandings required for occupational capability, which differs from the somewhat positivist and technical accounts of capability derived from the theory-practice dichotomy.

8.5 Implications for practice

It seems to me that, if developing occupational capability is about learning to act in the 'world of practice', then this can help us to reconsider how learning takes place within occupational roles. This implies that, capable individuals do not acquire large amounts of theoretical input to apply to practice in a ritualistic and prescriptive way, nor can they simply acquire such capabilities by practicing, devoid of any theoretical input. Instead, I propose that, occupational capability is concerned with developing a background understanding of the meanings and understandings that constitute that practice. As a result, I suggest that in order for learning to occur, there does not need to be a formal structure or plan in place, as learning takes place much more subconsciously than this; so individuals may not be aware that they have learnt anything at all. I also suggest that learners are not passive consumers of knowledge, but rather active creators of it; where knowledge is acquired through

our engagement in practice, through our exploration of our environment and through our interactions with others.

I believe that through such engagement, we will learn to deal with a whole variety of situations in our workplace, from the speed and ordering of tasks, and develop the physical dexterity required to handle equipment, and manipulate our bodies in such a way, to perform these activities. From this perspective, I propose that, capability involves developing the right habits and dispositions in relation to our occupational roles and the ability, not only to observe, but also to mimic and rehearse the practice of our more experienced colleagues. In this way, it seems to me that, individuals will begin to investigate and explore their environment, and develop an ability to 'read' situations, and acquire a whole repertoire of capabilities to allow them to inhabit the 'world of practice'.

I also believe such ideas can emancipate nurses from a fear of making errors, by deviating from prescriptive rules, which can potentially restrict their development as practitioners. Instead, I propose that, the role of educators is to nurture the natural ability of learners to be curious and questioning in relation to their practice, and focus on their development as individuals; rather than on their ability to perform tasks. My hope is that these ideas can liberate nurse education from trying to bridge some assumed gap between theory and practice, and instead focus on how individuals make sense of their 'world', as they become immersed in these practices. I therefore claim that occupational capability is concerned with intelligent performance, where the mind, body and emotions are engaged. This is the normal way, I want to suggest, that we learn to enact all roles, including our occupational roles, based on learning that might be said to be innate, self-organising and emergent.

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Appendix I

Ethical approval

King's College London

Rm 5.2 FWB (Waterloo Bridge Wing)

Stamford Street
London

SE1 9NH

14 May 2014

TO: Jennifer Hammond

SUBJECT: Approval of ethics application

Dear Jennifer,

KCL/13/14-419 - How do nurses learn to nurse - looking beyond the theory practice gap?

I am pleased to inform you that full approval for your project has been granted by the **E&M** Research Ethics Panel. Any specific conditions of approval are laid out at the end of this letter which should be followed in addition to the standard terms and conditions of approval, to be overseen by your Supervisor:

- Ethical approval is granted for a period of **one year** from **14 May 2014**. You will not receive a reminder that your approval is about to lapse so it is your responsibility to apply for an extension prior to the project lapsing if you need one (see below for instructions).
- You should report any untoward events or unforeseen ethical problems arising from the project to the panel Chairman within a week of the occurrence. Information about the panel may be accessed at: http://www.kcl.ac.uk/innovation/research/support/ethics/committees/sshl/reps/index.aspx
- If you wish to change your project or request an extension of approval, please complete the Modification Proforma. A signed hard copy of this should be submitted to the Research Ethics Office, along with an electronic version to crec-lowrisk@kcl.ac.uk . Please be sure to quote your low risk reference number on all correspondence. Details of how to fill a modification request can be found at: http://www.kcl.ac.uk/innovation/research/support/ethics/applications/modifications.aspx
- All research should be conducted in accordance with the King's College London *Guidelines on Good Practice in Academic Research* available at: http://www.kcl.ac.uk/iop/research/office/help/Assets/good20practice20Sept200920FINAL.pdf

If you require signed confirmation of your approval please email crec-lowrisk@kcl.ac.uk indicating why it is required and the address you would like it to be sent to.
Please would you also note that we may, for the purposes of audit, contact you from time to time to ascertain the status of your research. We wish you every success with this work.

With best wishes
Research Support Assistant
On behalf of E&M REP Reviewer Research Ethics Office

Appendix II

NHS R&D approval

PROJECT TITLE:	How do nurses learn to nurse – looking beyond the theory practice gap?
R&D Reference:	664
Sponsor:	Kings College

01 July 2014

Notification of host site approval

Dear Jennifer

I am writing to inform you that the research approval process for the above named project has been completed successfully. This approval includes the amendments listed at the end of this letter. The documents reviewed this proposal, and approved for use, are shown at the end of this letter.

The conditions for host site approval are as follows:

- The PI must ensure compliance with protocol and advise the host of any change(s) to the protocol. Failure of notification may affect host approval status.
- Under the terms of the Research Governance Framework, the PI is obliged to report any Serious Adverse Events to the Sponsor and the Trust, in line with the protocol and Sponsor requirements. Adverse events must also be reported in accordance with the Trust Policy & Procedures.
- The PI must ensure appropriate procedures are in place to action urgent safety measures.
- The PI must ensure the maintenance of a Trial Master File (TMF) as described in the tables at the end of this document.
- The PI must undergo regular, monitoring, audit and review.
- The PI must ensure that all named staff are compliant with the Data Protection Act, Human Tissue Act 2005, Mental Capacity Act 2005 and all other statutory guidance and legislation (where applicable).
- The PI must report any cases of suspected research misconduct and fraud.
- The PI must provide an annual report to the relevant authorities for all research.
- The PI must give notice of clinical trial closure.
- If there are any changes to the study then please inform the R&D office as these may require R&D approval before they are implemented.

Appendix III

INFORMATION SHEET FOR PARTICIPANTS

REC Reference Number: KCL/13/14-419 R&D Reference 664

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title - How do nurses learn to nurse, looking beyond the theory practice gap?

We would like to invite you to participate in this original postgraduate research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

- **Aims of the research and possible benefits**

  I am interested in how nurses learn to nurse within the clinical environment. It is hoped by undertaking this study that greater clarity and insight can be gained about how nurses develop their professional capability, which can be used to inform practitioners, educators and managers of nursing services.

- **Who will be asked to participate?**

  I have invited registered nurses with a variety of levels of experience to participate in the study either on an individual or a group basis.

- **What does the study involve?**

  The individual participants will be invited to complete a short data collection sheet giving details of their relevant educational/professional qualifications and clinical experience pertinent to the study. The researcher will shadow these nurses for a morning in practice to observe how they undertake their role as well as how they have learnt to do the things they do. The researcher will follow this observation period up by a qualitative interview to further explore these issues in greater depth. This interview should last about one hour and will take place in the postgraduate centre within the Trust. All interviews will be recorded, subject to your permission and then later transcribed by the researcher.

- **Are there any risks involved in participating?**

  The risks involved in participating in this study are minimal. However should participants reveal information to indicate patients are at risk, or that professional misconduct has occurred, that has not already been disclosed to professional leads then it may be necessary to inform a third party. If this does occur the researcher will inform the participant of this in the first instance.

It is appreciated that while the researcher is a student at King's College, they are also a work colleague of potential participants and as such individuals may feel a pressure to participate or have specific concerns about confidentially and anonymity. However there is no requirement to participate and certain steps have been put in place to ensure that privacy and confidentiality are maintained as much as possible (see section on privacy and confidentiality).

- **Are there any benefits involved in participating?**

  Participants will have an opportunity to discuss how they have learnt certain aspects of their professional role which may be relatively unrecognised, underappreciated or not always fully understood. The participants will also receive a written report on the findings from the research study.

- **How will privacy and confidentiality be maintained?**

  All data collection sheets, observation field notes and interview transcripts (both individual and group) will be coded so that the individual identity of participants is not revealed; in addition, in the final report the host organisation will not be identified. This means that no personal details, relating to the participants, will be held by the researcher. However while participants' names will not be revealed short excerpts and quotes from the interview may appear in the final report.

- **Anticipated plans for dissemination/publication**

  The study may be presented at a professional conference or seminar and prepared for publication in a professional journal.

- It is up to you to decide whether to take part or not. If you decide to take part you are still free to withdraw at any time and without giving a reason. In addition to withdrawing yourself from the study, you may also withdraw any data/information you have already provided up until it is transcribed for use in the final report, which will be the end of March 2015.

- If participants wish to withdraw they can request to do so by contacting the primary researcher directly (details below). Other concerns or queries can be addressed by contacting the primary researcher in the first instance. Please note if you decide to take part you will be given this information sheet to keep and be asked to sign a consent form.

- **Name and contact details of the researcher**
  Jenny Hammond, student researcher undertaking a Doctorate of Education (edD) at King's College London e-mail jennifer.hammond@kcl.ac.uk Department of Education/Professional Studies, King's College London, Waterloo Bridge Wing, Franklin-Wilkins Building, London SE1 9NH

- If this study has harmed you in any way you can contact King's College London using the details below for further advice and information: Research Supervisor Dr Gerard Lum Lecturer in Philosophy and Education Management gerard.lum@kcl.ac.uk.

CONSENT FORM FOR PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: How do nurses learn to nurse – looking beyond the research practice gap?

King's College Research Ethics Committee Ref:_____

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

- **I confirm that I have read and understood the information sheet dated (419/664) for the above study. I have had the opportunity to consider the information and asked questions which have been answered satisfactorily.**

- **I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can notify the researchers involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up until the end of March 2015.**

- **I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the UK Data Protection Act 1998.**

- **I understand that my information may be subject to review by responsible individuals from the College for monitoring and audit purposes.**

- **I understand that confidentiality and anonymity will be maintained and it will not be possible to identify me in any publications. However I agree that excerpts from my interview may appear in the final report.**

- **I consent to my interview being audio recorded.**

Participant's Statement:

I _____

agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Appendix IV

Example of field notes from the jot note

Jot note - questioning at handover and the discussion of an unconscious patient

Field notes (arising from jot note). The participant had been on duty the day before and during morning handover she discusses a patient with her colleague, who has been on duty overnight. The participant is concerned about a reduced level of consciousness in one particular patient. She queries whether the patient may have a shunt or hydrocephaly, as she has noted this condition before, and is concerned that it is something that may have been missed. The participant also reviews her own notes from the day before and relates that she is concerned that the reason for this patient's unconsciousness remains unknown. She asks her colleague if a CT has been taken and if it is normal, and what would hydrocephaly look like on a CT? Her colleague relates that all the scans are normal - but the participant pulls a face and appears unconvinced. She relates to the researcher that she has been worried about this patient all night and that she cannot get a clear 'clinical picture' of what is going on, as the bits just 'do not fit together'. She says she has been in situations before when patients have deteriorated, when not enough consideration has been made of their level of consciousness. This she says is a particular concern with the ward nurses, who often do not alert her team to the presence of reduced levels of consciousness in patients.

Commentary. *The nurse is physically perturbed by a concern that something is not right with the patient and is unconvinced by her colleague's reassurance that the scans are normal. The participant has a feeling that something is not quite right and that some clue or other is missing. She is keen to ask more questions and to follow up and find out what is happening with this lady. Her concern may arise from her previous experience in dealing with patients in similar situations, and it is clear that she feels she does not have a grasp on this current situation. This issue has given the nurse disturbed sleep as she has been ruminating on it overnight. She also appears concerned that others are not taking her concerns seriously.*

Questions to ask at interview

You mentioned that often you get a feeling that things don't 'fit together' and that you don't have a clear clinical picture of a patient – how to you know when something is not right?

Why were you worrying about this patient, when it appears your colleagues were not?

Appendix V

Example of an interview schedule

Past history

1. Can you recall any specific incidences or experiences that have helped you develop as a nurse?

Developing schemata

2. How did you learn to look out for and check for signs of unresponsiveness in patients – was this always so?

3. How did you come to know what the term 'ward based care' meant?

4. How did you learn what to write in the clinical notes? (and who do you think you are writing them for?)

5. You said 'no one tells you that' in relation to how you learnt to interpret blood results – so how did you learn to interpret these blood results if no-one taught you?

Decision-making

6. How do you know when you need to escalate your concerns to someone else?

7. How do you know when something doesn't look or feel right?

Artefacts

8. You were using your phone and the internet quite frequently to access information? How does the use of these enhance your decision-making?

Working with others

9. During the observation period it was clear that you trusted some colleague's advice but not others – what makes you able to distinguish this?

10. How do you know when it is time to leave the ward staff with a patient and move onto the next clinical area?

Feelings

11. Do your feelings help you make decisions?

12. Does the learning from previous mistakes / errors influence your current decision-making?

Appendix VI

Extract of a participant's interview transcript with commentary

The unconscious patient

The participant works across a variety of clinical areas looking after people who are critically unwell and notes that while many nurses will alert her if there are signs of circulatory compromise, they will not always alert her to signs of unconsciousness. She offers a particular reason for this,

'I don't know, I just think people are used to seeing people asleep possibly, they don't see it as being an issue, they are just unwell so they're sleeping they're not unconscious as such…., but it is something the whole team has found…quite often when we get a phone call 'their obs are this, but they're not responsive', and when you probe them further it turns out that they are totally unresponsive……..We did have a patient the other day that someone asked just that 'I'm calling you to ask if we just put them on the LCP' and we were like NO…..NO!' (1:1).

In this case unconsciousness seems to be raised as an afterthought and these nurses appear to be suggesting that it is irreversible, by putting them on an end of life pathway. So if this participant recognises that levels of unconsciousness are significant and warrant immediate action, how has she learnt the importance of this while other nurses apparently haven't? Why is it that these things stand out as significant for her?

'*I think in Surgery, if a patient is unconscious they're less likely to escalate them than if they're in medicine as they're used to dealing with those patients at that point, whereas in Surgery they don't. They are coming in for a surgical intervention, they are not generally sick as such they just need something fixed, although they might have co-morbidities as well it's not as bad as it is in Medicine. So going over to Intensive Care for me, I then became party to receiving those types of patients and learnt from that… looking after tubed and ventilated patients as well and obviously if you're not awake, you don't breath*.' (1:1).

She puts this down to her work in Critical Care. She is learning different ways of seeing things and perhaps employing slightly different schemata to assess patients, as she moves from what she sees as 'care of the surgical patient' to 'care of the critically unwell patient'. What is notable is that unconsciousness would be picked up at home, but in hospital it can get overlooked in some areas, as there is an assumption that 'they are sleeping'. In everyday terms individuals understand the importance of individuals being awake and alert, yet in hospital this norm is changed as 'people do things differently here'. This might say something about the different environments in which these nurses work.

Appendix VII

Table to illustrate the development of themes from data items

data item	partici-pant	pg no	evidence	basic content	meaning	initial code	new code	theme
1	exp1	1	interview	recognising un-consciousness	learning what normal is	learning what normal is	nursing schemata	learning to see, feel and do
2	exp1	2	interview	meaning of 'ward based care'	understanding terms in context of how they are used	learning terminology	developing contextual awareness	learning to see, feel and do
3	exp1	2	interview	describes importance of rules and guides	sense of doing the right thing	developing espoused theory	rule-following behaviour	learning the right things to do
4	exp1	2	observation	recognising the situation requires escalating	sense something is not right	role of feelings informing practice	developing intuition	learning to see, feel and do
5	exp1	3	interview	running initial thoughts by colleagues	tentatively thinking aloud and playing with ideas	learning by trial and error	learning by trial and error	learning the right things to do
6	exp1	4	interview	people noticing you as a member of a specific team	importance of who you are perceived to be	recognition by others	learning ways of being	developing a constitutive understanding
7	exp1	4	interview	learning from personal experience	learning how to act towards others	learning ways of being	learning ways of being	developing a constitutive understanding
8	exp1	5	interview	use of phone / internet	care mediated through technology	use of artefacts	artefacts and contextual awareness	learning the right things to do
9	exp1	6	interview	recognising deteriorating patients	getting a feel that something is not right	learning to feel	nursing schemata	learning to see, feel and do

Appendix VIII

Coding guide

Theme one - learning to see, learning to feel and learning to do

1. Learning to see

- participant acknowledges seeing things (or not seeing things) that other individual nurses do/do not see

- participant defines or acknowledges some ephemeral phenomenon as a fixed thing

- participant acknowledges that the way they see something may be different from the everyday or typical understanding or conceptualisation of that thing

- participant refers to or acknowledges learning what 'normal' is

- participant refers to or acknowledges recognising when something is 'abnormal'

- participant is developing new clarity / meaning in a situation which was not initially there

2. Learning to feel

- participant senses they are picking up cues intuitively or tacitly

- participant recalls having an unusual / gut / emotional feeling or sense of the situation

- participant acknowledges that they are anticipating that things are going well

- participant acknowledges that they are anticipating that things are not going well

- participant acknowledges they have no concrete information to support or back up these feelings

- participant suggests they are motivated to act in a certain way that they cannot articulate or rationalise

3. Learning through 'physically doing things'

- participant acknowledges that through the experience of actually physically doing something they have learnt or understood something

- participant notes physically doing something that helps them remember / recall how to do things

- participant conveys a sense that through doing something the meaning and understanding of that situation changes

- the participant develops a particular connection with some item / artefact / tool that helps them function within that particular context